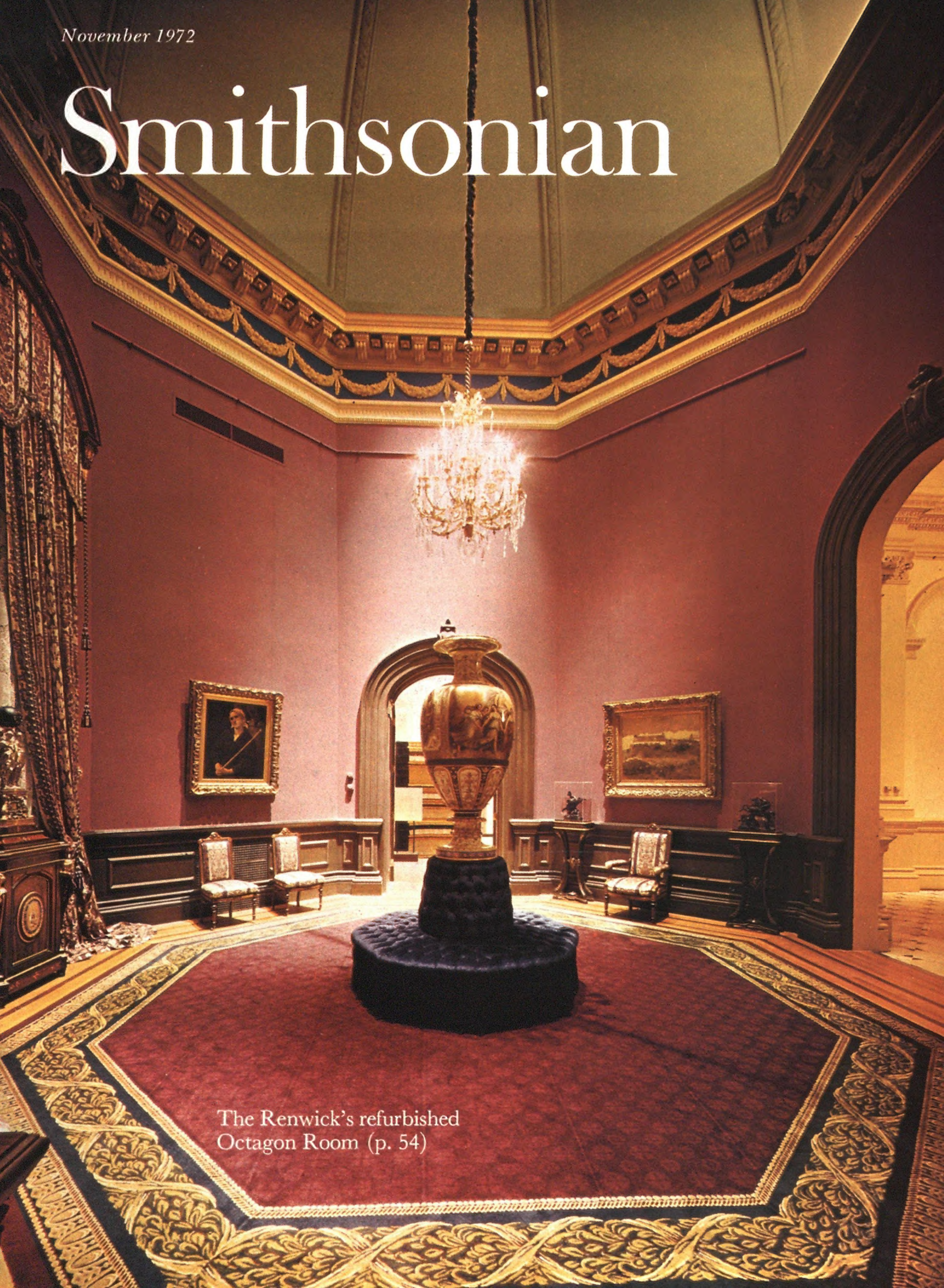
November 1972

Smithsonian



The Renwick's refurbished Octagon Room (p. 54)

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Smithsonian

Volume 3, Number 8

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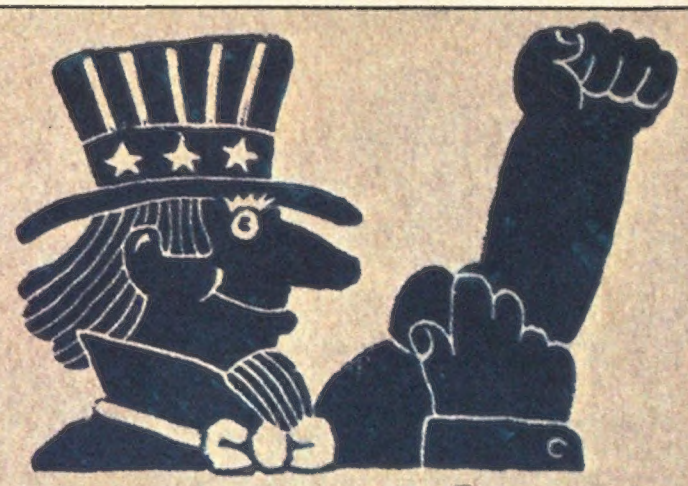
Two weeks in the hospital can cost you two months in wages.



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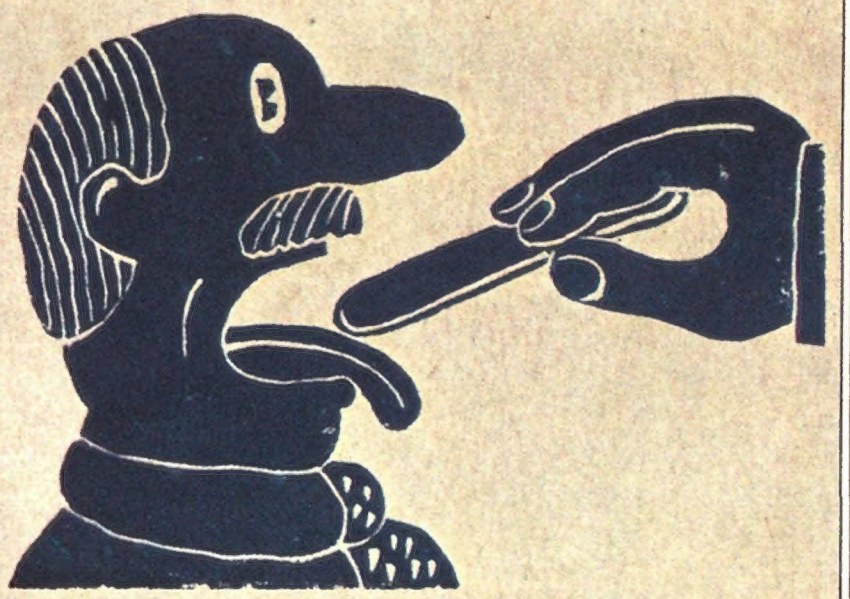

We need incentives for medical people to work in places where they don't work now. We need walk-in neighborhood health centers to take a needless burden off the hospitals. And that's just the start.

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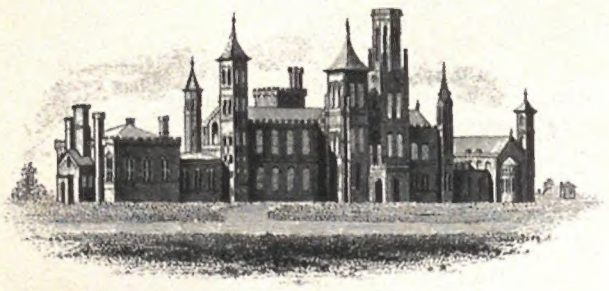
Secretary Ripley's comments

The view from the castle



If a scientist who moves into government does not learn a whole new way of thinking, he may think he's an expert on everything

Washington is full of scientists but it has a poor scientific climate. There are some 7,000 people with PhDs in scientific disciplines in the area and many of them are administrators or committee members in huge agencies such as the Department of Defense, in national foundations, on government-appointed panels and commissions or in grant-supported bureaucracies of societies and academies.

The great problem with scientists such as physicists, biologists and chemists serving in government is that their intellectual training is essentially different from that of people in law, the humanities or the "soft" sciences such as economics and sociology, which produce everyone else in government. Scientists are trained to reason inductively, creeping along a path from proven fact to proven fact and finally perhaps essaying to say that such and such a theorem or principle is true. Humanists are trained in an opposite manner, to draw a conclusion from general principles that are known or assumed, to reason deductively.

Deduction is good enough for most processes of government *provided* that the known or assumed principles work out to be right for the greatest number of people most of the time. When they don't, there are elections or those gradual and mysterious shifts in public opinion which sooner or later influence the branches of government.

Recently we have had to deal with a new spate of assumed truths: the urban crisis, the environmental crisis, the rights to a job, to welfare, to living space, to equal opportunity, to equal education. These—and our responses to them—are the results of deductive reasoning. We sense what is right in a broad spectrum of public issues on the quality of life, but much of it we cannot prove scientifically.

In this context the scientist can become just another gadfly on the rump of the body politic. Good sense counsels that when he is outside his special field and beyond his ability to prove a theory inductively, every scientist must behave like a layman. But scientists have been clamoring to be heard, insisting on their right as highly skilled specialists to speak on a host of social and environmental problems. Yet their training in inductive reasoning does not necessarily prepare them for the deductive processes of governing.

Thus a scientist in Washington lives in a poor scientific climate. Those who become bureaucrats or administrators abdicate to a great extent the roles for which they have been trained. Whether they like it or not they have become humanists. They should discourage the use of the title "doctor," and practice being just sensible, rational people who think deductively.

Furthermore, we should avoid the spectacle of elder statesmen of science—latter-day gurus, former specialists in chemistry or physics—becoming instant experts on geopolitics or the Earth's doomsday. It is possible, after all, to attain the giddy heights of time on television or before Congressional committees on the basis simply of being a sensible, reasoning person; one need not use the wings of skills in other fields.

Scientists can be people, not always experts. If they think otherwise they are fooling themselves and contributing to a deteriorating climate.

S. Dillon Ripley

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Phenomena, comments and notes

Birdlike crocodiles, male chauvinist aspirin, fish that switch and fight, and regrettable news about chimps

As Dr. John Calhoun reports on page 26, anthropologists have found instances now in which, sadly enough, entire human societies have lost almost every vestige of their humanity, descending into behavior worse than we expect from beasts.

It is another blow to learn, contrarily, that some of the most generally admired beasts are capable of some of the most generally reviled aspects of human behavior. Specifically, chimpanzees, who hold so honored a place in the shadow of Man, have twice been discovered engaged in cannibalistic infanticide.

Such behavior, says J.D. Bygott of the University of Cambridge in *Nature* magazine, "is rarely seen among wild mammals and is hitherto unrecorded in nonhuman primates." In both cases (one in Uganda, the other in Tanzania), groups of adult males were found eating an infant alive. Mostly, however, they played violently with their partially eaten victims, suggesting to Dr. Bygott that the molesters were more curious than hungry.

Were these events merely unpleasant aberrations, or were they rarely seen but "normal" responses to situations we simply don't understand yet? Chimpanzees are largely vegetarian, although they do occasionally prey on monkeys and young baboons. Also, like many social animals, they get mad at each other as well as members of other chimpanzee bands. Have the herbivorous chimps learned to be predators so recently in their evolution that

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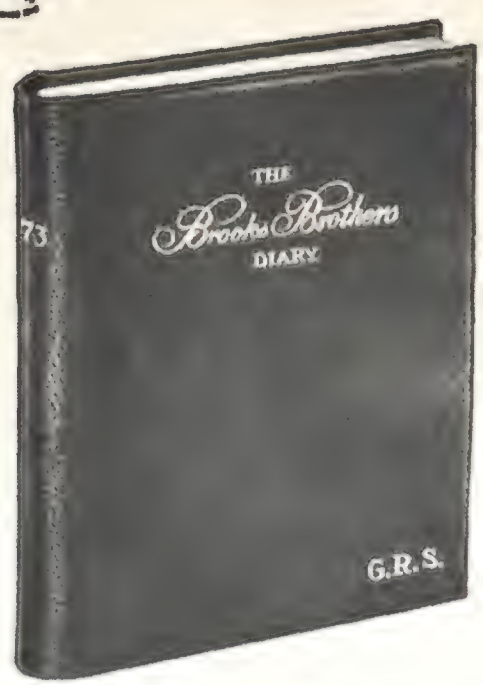

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they confuse intramural aggression with the killing of prey? Dr. Bygott cannot say.

The worst of bees

The Department of Agriculture is watching with suspicion and alarm the northward advance of a particularly ferocious honey bee from southern Brazil. The bee (originally African and indistinguishable to the naked eye from the usual honey bee) is so aggressive that it drives other species out of forage areas, takes over commercially operated hives, and in several instances has fatally stung both animals and men. Indeed, so ferocious is the bee that the committee of intrepid beekeepers and entomologists studying it found that it was "frequently imprudent or impossible to measure all aspects of aggressiveness. . . ."

The bee has spread south into Argentina and north as far as Peru, from whence it is continuing northward at a rate of 200 miles a year. This gives us well over six years before it reaches the southern United States which, because of climatic conditions, is probably as far north as it can go. The committee urges quarantines and immediate research on a large scale so that the bee may be headed off with physical and chemical barriers until permanent controls can be devised. One solution may be genetic engineering of a sort, wherein a barrier of "nice" bees would await the Brazilians and breed with them, eventually diluting the aggressive genes.

Aspirin and women

Only a small percentage of people who use aspirin have adverse reactions to it, but since aspirin is the most widely used drug in the world, the actual number of adverse reactions adds up to a significant problem. One such reaction is gastric ulcers (another is asthma), and it appears from studies in Australia that aspirin-caused gastric ulcers are more common among women than men.

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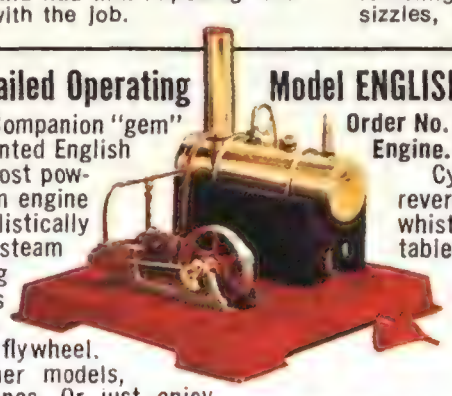

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down (some in the bloodstream and most of it later on in the liver) into salicylic acid and acetic acid. This degradation is accomplished by an enzyme system known as aspirin-esterase. But it is the *intact* aspirin molecule that is believed to act against pain and inflammation, not the separated constituents. And it also seems to be the intact molecule that gives some people gastric ulcers.

Looking into this unfair treatment of women, four researchers from the University of Rochester and the Genesee Hospital assayed the blood of 104 men and women. They found that on the average the women contain about one-fifth less aspirin-esterase in their blood than the men. It seems reasonable, the researchers wrote in *Nature,* that people with less of the enzyme might degrade aspirin more slowly and are therefore more prone to its ulcerous side effect. And this led them to suggest that aspirin be prescribed on the basis of an individual's biochemical ability to break it down rather than the standard advice one receives for nearly all minor complaints: Take two aspirin and go to bed.

The urge to be male

pure fashion...

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Our latest insight into the seemingly endless inventiveness of fish in working out their sexual affairs comes from Heron Island on the Great Barrier Reef where, over a two-year period, D. R. Robertson of the University of Queensland recorded the activities of *Labroides dimidiatus.* This is one of many species of "cleaner fish" which spend a good deal of their time helpfully removing parasites from the skin of other fish.

Labroides dimidiatus is normally found in small groups consisting of a male and his harem of three to six females, plus a few immature hangers-on. The male aggressively keeps other male interlopers away from his harem, but he has an additional problem: He must also be constantly on the alert lest his largest and most aggressive wife turn into a male, an embarrassment he avoids by regularly bullying her. She in turn bullies the next highest female in status, and so on down the line. Thus an uneasy sexual order is maintained.

However, as soon as the male's dominant presence is gone (either as a result of the male's death or his forcible removal by Dr. Robertson), the number one wife

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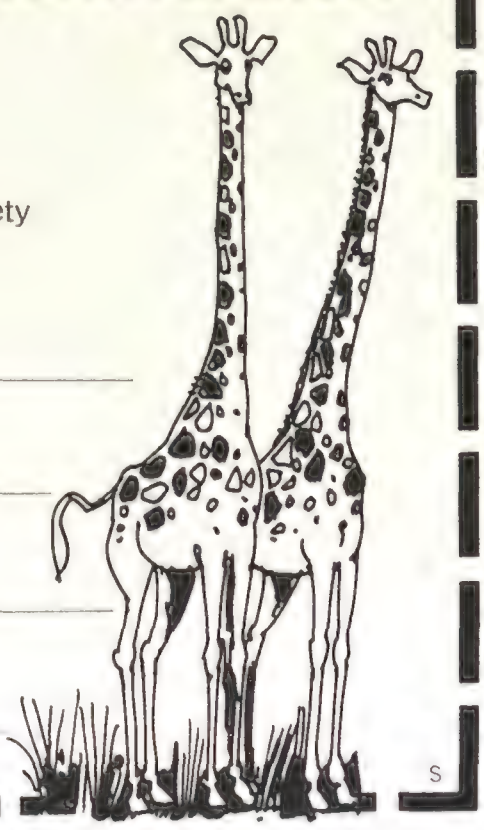

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Sabena's Africa

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begins to turn into a male. According to Dr. Robertson's report in *Science* magazine, the metamorphosis is complete within two to four days. During the process other females proceed to move up a notch in the pecking order, while neighboring males may raid the territory and try to take over the harem before the dominant female has a chance to switch.

Though Dr. Robertson sees a variety of possible genetic advantages in this social control of sex reversal, it seems, all in all, like an exhausting way of life. In one nerve-racking instance, the high-status female of a recently bereaved harem was busy changing into a male when an invading male arrived and succeeded in taking over. The high-status female, by now almost a male, had to revert to being a female and remained so for two weeks. At this point, the male left and the undaunted female once again changed into a male, this time, apparently, for good.

Odd tree-fellows

Although you would be forgiven for not noticing it upon first glance, crocodiles are very closely related to birds. Indeed, the big reptiles appear to be a "frozen" stage in the evolution of birds.

Traditionally, crocodiles were thought to have taken a more or less independent path from a Triassic reptilian group called Thecodontia which also gave rise to the dinosaurs and flying reptiles.

Upon closer examination of a crocodilian ancestor called *Sphenosuchus,* Alick D. Walker of the University of Newcastle-upon-Tyne noted a number of birdlike features. A host of crucial anatomical features in the skull and joints satisfy Dr. Walker that not only are *Sphenosuchus* and birds of "common stock," as he writes in *Nature,* but that crocodiles may well have had an arboreal origin (from which they seem to have mercifully regressed).

Turning to living crocodiles, Dr. Walker finds various embryological similarities with birds. Also, the crocodilian heart, whatever else you may think of it, "represents an advanced stage on the way to the bird type."

Spare us the backlash

For anyone tempted to give air quality a low priority, a recent report by the National Academy of Sciences will serve as a depressing reminder of the human costs

For four generations
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Collectors' Item

In a growing number of American cities can collection bins have been retired with honor. No more collecting, boxing, hauling, dumping. But no cop-out from environmental concern, either.

In these cities former collectors have entered into a responsible partnership with their communities. They buy their beverages and other products in steel cans. Then they simply drop the empties into their garbage pails, and the city separates them, easily and economically, for recycling.

The secret is steel's unique magnetic quality. It makes the process of magnetic separation a practical reality that any city can use.

And communities across the nation are using it—to help solve the can disposal problem, to turn used steel cans into new products, to conserve other resources like tin and copper, to save shrinking landfill space and to bring money into municipal coffers from the sale of can scrap.

Seventeen cities already have magnetic separation systems—big cities like Chicago, Atlanta and Houston; and smaller ones like Madison, Wisc., Franklin, Ohio, and Melrose Park, Ill. They're recovering an estimated two-and-a-half billion used steel cans a year. By the end of 1973, 11 more cities will join the parade.

If your city gets into the act, you can stop collecting cans, too... and start collecting something you want to keep.

Steel
the recycled material

Tinplate Producers/American Iron and Steel Institute

in *not* cleaning up the air as soon as possible. The report, summarized in *Science News,* links air pollution to lung cancer all but conclusively.

The worst villain in our befouled air is polycyclic organic matter (POM), the primary sources of which are coal and wood furnaces in residences, coal refuse fires, and coke production from the iron and steel industry. These pollutants also are emitted by motor vehicles and are found in tobacco smoke.

People in urban areas, the report says, are twice as likely to get lung cancer as people in nonurban areas, and the incidence is even higher in those urban areas where the products from burning fossil fuels are found in high concentrations. Moreover, the report goes on, studies of immigrants indicate that the incidence of lung cancer is related to one's place of origin, suggesting that there is a "significant environmental effect operating early in life for lung cancer development." So those who seek to compute the rate at which we should clean up our air may with confidence work into their equations the millions of children soon to be born in urban America for whom, it seems, the bell will immediately, if quietly, begin to toll.

Warning

Wildlife preservationists are quick to point out that providing a sanctuary for an endangered species does not necessarily render it safe and sound. A reminder of this wise maxim came in a recent report from the Smithsonian Institution's Center for Short-lived Phenomena.

Until it was brought under control, a fire raged for seven days last August in the Los Padres National Forest near Ventura, California. Called the Bear Fire, it took six lives and caused over $2 million in resource damage. Of the 17,150 acres devastated, 270 were within the sanctuary of the California condor. None of the 60-odd condors extant was disturbed, but it was not an especially large fire by California's unhappy standards.

Progress

Those with occasional periods of doubt about the ultimate perfectibility of the human race will be comforted to hear of the recent publication of a book entitled *Advances in Creep Design.*

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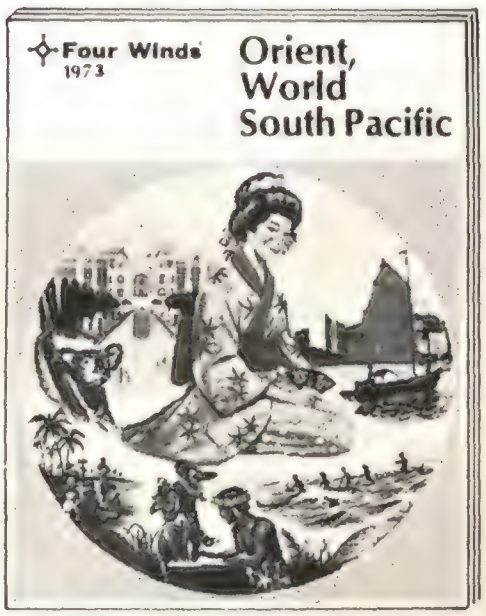

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Letters to the Editor

African sculpture

Dear Sir: Warren Robbins' article on African sculpture in the September issue is the finest thing of its kind I've seen. In simple and clear statements it shows the reader how to look at African art. It would be useful to every school teaching anything about Africa.
Anne Fredericks Wayne
Bronxville, New York

100 years ago

Dear Sir: Being inclined to romanticize other times, I found Albin Dearing's delightful account of U.S. life in 1872 very salutary reading. He might have added that there was also a 19th-century parallel to today's resurgence of interest in parapsychology and communication with the dead. President Lincoln, a man willing to listen to good advice from any source, invited mediums to the White House on more than one occasion, according to Earl Fornell's book, *The Unhappy Medium.* Lincoln listened gravely to messages from Indians and others in the Happy Hunting Ground, but whether or not he was influenced by their advice he never would say. Even such a pragmatist as William James was intrigued by spiritualism. James, however, went on from there to serious research on extrasensory perception and psychic phenomena.
Pat Tucker
Orlando, Florida

Jersey Wildlife Trust

Dear Sir: I am eight years old, and I am very excited about what Mr. Gerald Dur-

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More parades promoting civic pride.

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The ideal

The ideal city will happen when people with different—even opposing—ideas can work together to build an environment that balances human diversity.

The real

Our cities are threatened with chaos to the degree that groups and individuals ignore their interdependence on one another.

There are no simple solutions to urban problems. Because modern cities aren't simple places. They're concentrations of diversity—different people with different attitudes, backgrounds, skills. Their interaction makes a city stimulating; their interdependence on one another makes the city workable. We must find solutions that respect human diversity and balance it in a mutually supportive environment. Not a simple problem. But the solutions are worth working for.
Because the city is the future.
AtlanticRichfieldCompany

artist: magritte Collection: Richard M. Scaife

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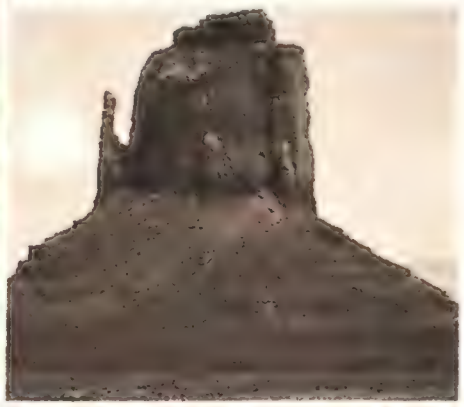

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rell is doing to save our almost-extinct animal friends. I loved the SMITHSONIAN's article and pictures, and I would like to help this special zoo.

I had a near-fatal accidental fall when I was six years old, and I have trouble walking and talking—but I am a real nature lover.

My mother says I can send $9 for the overseas membership, but I want to adopt one of the animals. (I am adopted, and I know how to be a good parent.) My allowance is not very big, but maybe there is a light eater I could feed or maybe I could share an animal with another child. I want very much to help and to get regular reports on my animal's progress. I am partial to sea animals and birds, but I love all living things.

Philip Alan Junkins
Pasco, Washington

We are forwarding Philip's letter, along with other readers' inquiries, to Gerald Durrell. To those wishing to write direct, the address is: Jersey Wildlife Preservation Trust, Jersey, Channel Islands, United Kingdom. Ed.

Dear Sir: In your photograph of Gerald Durrell's white eared pheasant, why don't the ears show?

K. T. Edwards
New York City

The bird is a member of the same genus as the brown eared pheasant and the blue eared pheasant (see below): thus it is called the white eared pheasant, in spite of the fact that the tufts on either side of its head are barely visible. The tufts, by the way, are not ears but feathers that cover the ears. Ed.

View from the castle

Dear Sir: Now that Secretary Ripley has presented such a persuasive plea for adoption of the metric system in the United States, I hope he will take another for-

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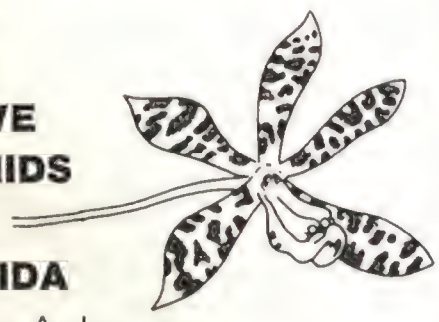

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ward step by urging a national reform in rendering of dates. For too long Americans have stood against the rest of the world in putting month first, then day and then year. The worldwide system of day, month, year—1 November 1972—is not only more logical but also doesn't require any punctuation.
Roger Pineau
Washington, D.C.

Dear Sir: While changing to the metric system, why not also adopt the 24-hour clock? It would save a lot of confusion from noon to midnight.
Robert B. Miller
Atlanta, Georgia

Phenomena, comment and notes

Dear Sir: Your item on the Sims and Baumann study of tornado psychology prompts me to point out an omission in their reasoning. Granted the hypothesis that substandard houses are no more subject to tornado damage than those of solidly constructed masonry, the authors ignored the fact that most houses in Alabama don't have basements while most of them in Illinois do.

In the 1950s I photographed scenes in the environs of Worcester, Massachusetts, through which a tornado had passed. The houses had been of frame construction and all were leveled, but only one out of about a dozen had a gutted basement.

Self-preservation is so deep-rooted in human nature that it is difficult to believe that religious outlook would inhibit a Southerner from seeking shelter in his cellar if he had one.
D. C. Thompson
Wilmington, Delaware

Cleanliness

Dear Sir: In Patrick Ryan's article on cleanliness, I was sorry to see that you are keeping alive an old hoax perpetrated by H. L. Mencken in 1917. Pennsylvania, Ohio and Virginia never debated bills to ban baths, and President Millard Fillmore did not install the first bathtub in the White House.
Ronald C. Semone
Washington, D.C.
It was James Madison who had the first bathtub installed in 1814. We, along with at least 45 other publications, were taken in by Mencken's hoax. Ed.

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I understand that I can correspond with my child, and continue the "adoption" longer than one year if I wish. Also, I may discontinue the "adoption" at any time.

☐ I cannot "adopt" a child, but want to help $_____.
☐ Or, I will pledge $_____ per month.
☐ Please send me further information.
☐ If for a group, please specify_____.
Church, Class, Club, School, Business, etc

Name_____

Address_____

City_____ State_____ Zip_____

You can "adopt" a child from any of the following countries: Bolivia, Chile, Colombia, Guatemala, Honduras, Hong Kong, India, Iran, Japan, Korea, Lebanon, Mexico, Nigeria, Paraguay, Peru, Syria, Thailand, U.S.A.—Appalachian children or American Indians. (Or a child of greatest need.) All gifts are fully tax deductible.

CHILDREN, INCORPORATED

National Park System

Dear Sir: As an employee of the National Park Service, I found your August article on its 100th anniversary especially interesting. While we may never know the originator of the national park idea, I thought you might be interested in the following quotation, from the June issue of *Nebraskaland,* the magazine of the Nebraska Game and Parks Commission:

"We have little apprehension of giving too unfavorable an account of this portion [the plains] of the country. Though the soil is in some places fertile, the want of timber, of navigable streams, and of water for the necessities of life, render it an unfit residence for any but a nomad population. The traveler who shall at any time have traversed its desolate sands, will, we think, join us in the wish that this region forever remain the unmolested haunt of the native hunter, the bison and the jackal." By Edwin James, historian, botanist and geologist with the Long Expedition of 1819.

George A. Fisher jr.
Omaha, Nebraska

Archaeology

Dear Sir: Turning the spotlight in your August issue on the big dig at Koster in the lower Illinois valley awakened the news sense of many Illinois periodicals to the importance of this previously almost ignored contribution to archaeology. Newspapers proceeded to present articles-in-depth on this project and, when operations threatened to end because of financial problems, Mrs. Dorothy Ogilvie, wife of the governor, guaranteed to raise the necessary funds from private sources.

James Shanahan
Chicago, Illinois

Dear Sir: As a member of the Foundation for Illinois Archeology, I have attended lectures by Dr. Stuart Struever who was perched atop a Koster main trench in your August cover picture. My advice to him is: Do be careful. If you were to fall from such a cliff into some undiggable pit and your bones get mixed with those of 7,000 years ago, it could give some future archaeologist quite a headache. Perhaps you should wear an uncorrodable name tag with a date on it.

Clarence R. Smith
Aurora, Illinois

The American forest still belongs to the American people.

33% public and private forestland not suitable for commercial trees, or set aside for parks and wilderness areas.

19% state and federal forestland.

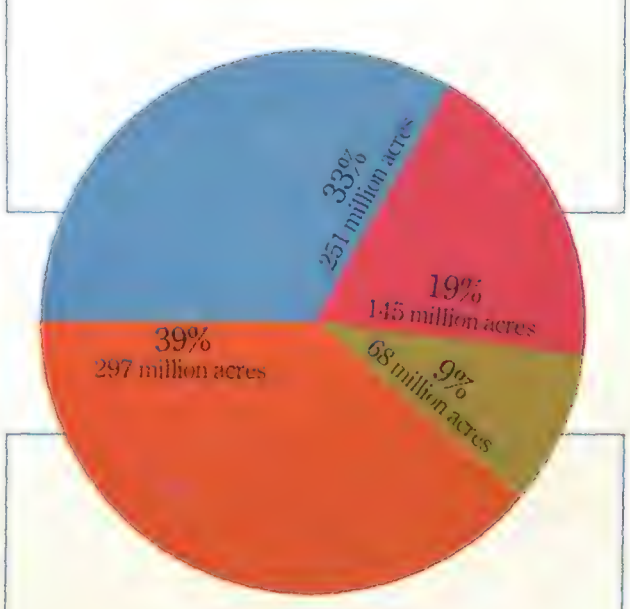
And to a *lot* of people.

To begin with, four million individual Americans own 39% of the entire forest—a forest that's still three-fourths as large as it was when Columbus landed.

Then, too, *everybody* shares ownership in that 19% of the forest owned by federal and state governments which supplies so much of the raw material for building our houses and cities and making our paper products.

And when you add the 16 million acres of forestland that's been set aside for parks and wilderness areas, and the land not suitable for growing commercial trees, the American people—individually or collectively—own 91% of America's 761 million acres of forest.

So if the forest industries seem to own more than their 9%, it's probably because with responsible, scientific management they've been able to make this 9% produce *one-third* of all the raw material we need for today's wood and paper products, and still keep America green-and growing.



For the whole story on America's forest today, get "Forests USA." For your copy of this full-color, 16-page booklet, send 25¢ to AFI, 1619 Massachusetts Avenue, N.W., Washington, D.C. 20036.

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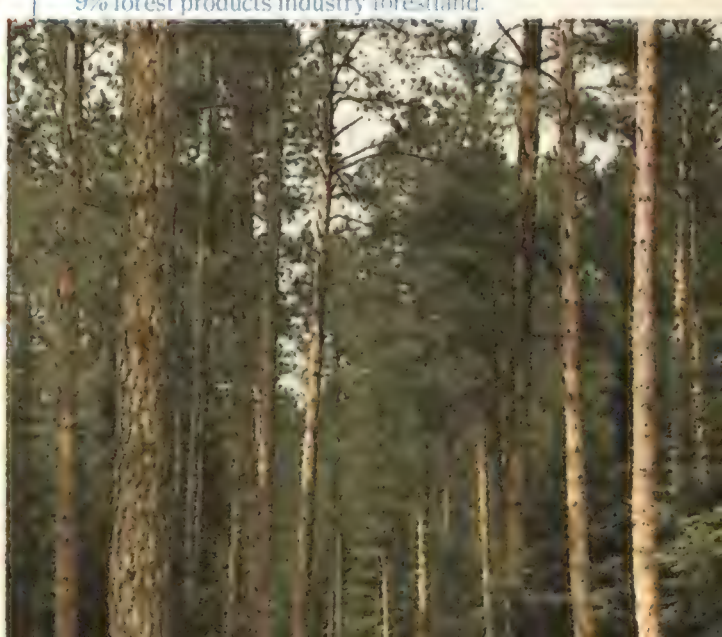
American Forest Institute 10

39% individually-owned forestland.

9% forest products industry forestland.



Unwanted by Ik society, an old man, who remembered
times of human caring, lies among the rocks
of the mountain, quietly awaiting a lonely death.

By John B. Calhoun

Plight of the Ik and Kaiadilt is seen as a chilling possible end for Man

A commentary on the current work of two anthropologists contains a grim warning of debasement in our times

The Mountain—how pervasive in the history of man. A still small voice on Horeb, mount of God, guided Elijah. There, earlier, Moses standing before God received the Word. And Zion: "I am the Lord your God dwelling in Zion, my holy mountain."

Then there was Atum, mountain, God and first man, one and all together. The mountain rose out of a primordial sea of nothingness—Nun. Atum, the spirit of life, existed within Nun. In creating himself, Atum became the evolving ancestor of the human race. So goes the Egyptian mythology of creation, in which the Judaic Adam has his roots.

And there is a last Atum, united in his youth with another mountain of God, Mt. Morungole in northeasternmost Uganda. His people are the Ik, pronounced eek. They are the subject of an important new book, *The Mountain People,* by Colin M. Turnbull (Simon and Schuster, $6.95). They still speak Middle-Kingdom Egyptian, a language thought to be dead. But perhaps their persistence is not so strange. Egyptian mythology held that the waters of the life-giving Nile had their origin in Nun. Could this Nun have been the much more extensive Lake Victoria of 40 to 50 millennia ago when, near its borders, man groped upward to cloak his biological self with culture?

Well might the Ik have preserved the essence of this ancient tradition that affirms human beginnings. Isolated as they have been in their jagged mountain fastness, near the upper tributaries of the White Nile, the Ik have been protected from cultural evolution.

What a Shangri-la, this land of the Ik. In its center, the Kidepo valley, 35 miles across, home of abundant game; to the south, mist-topped Mt. Morungole; to the west the Niangea range; to the north, bordering the Sudan, the Didinga range; to the east on the Kenya border, a sheer drop of 2,000 feet into the Turkanaland of cattle herdsmen. Through ages of dawning history few people must have been interested in encroaching on this rugged land. Until 1964 anthropologists knew little of the Ik's existence. Their very name, much less their language, remained a mystery until, quite by chance, anthropologist Colin M. Turnbull found himself among them. What an opportunity to study pristine man! Here one should encounter the basic qualities of humanity unmarred by war, technology, pollution, over-population.

Turnbull rested in his bright red Land Rover at an 8,000-foot-high pass. A bit beyond this only "navigable" pass into the Kidepo Valley, lay Pirre, a police outpost watching over a cluster of Ik villages. There to welcome him came Atum of the warm, open smile and gentle voice. Gray-haired at 40, appearing 65, he was the senior elder of the Ik, senior in authority if not quite so in age. Nattily attired in shorts and woolen sweater—in contrast to his mostly naked colleagues—Atum bounced forward with his ebony walking stick, greeted Turnbull in Swahili, and from that moment on took command as best he could of Turnbull's life. At Atum's village a plaintive woman's voice called out. Atum remarked that that was his wife—sick, too weak to work in the fields. Turnbull offered to bring her food and medicine. Atum suggested he handle Turnbull's gifts. As the weeks wore on Atum picked up the

Dr. Calhoun and his controversial mouse "cities" appeared in SMITHSONIAN *of April 1970. He wrote about lemmings in our January 1971 issue.*

parcels that Turnbull was supplying for Atum's wife.

One day Atum's brother-in-law, Lomongin, laughingly asked Turnbull if he didn't know that Atum's wife had been dead for weeks. She had received no food or medicine. Atum had sold it. So she just died. All of this was revealed with no embarrassment. Atum joined the laughter over the joke played on Turnbull.

Another time Atum and Lojieri were guiding Turnbull over the mountains, and at one point induced him to push ahead through high grass until he broke through into a clearing. The clearing was a sheer 1,500-foot drop. The two Iks rolled on the ground, nearly bursting with laughter because Turnbull just managed to catch himself. What a lovable cherub this Atum! His laughter never ended.

New meaning of laughter

Laughter, hallmark of mankind, not shared with any other animal, not even primates, was an outstanding trait of the Ik. A whole village rushed to the edge of a low cliff and joined in communal laughter at blind old Lo'ono who lay thrashing on her back, near death after stumbling over. One evening Iks around a fire watched a child as it crawled toward the flames, then writhed back screaming after it grasped a gleaming coal. Laughter erupted. Quiet came to the child as its mother cuddled it in a kind of respect for the merriment it had caused. Then there was the laughter of innocent childhood as boys and girls gathered around a grandfather, too weak to walk, and drummed upon his head with sticks or pelted him with stones until he cried. There was the laughter that binds families together: Kimat, shrieking for joy as she dashed off with the mug of tea she had snatched from her dying brother Lomeja's hand an instant after Turnbull had given it to him as a last token of their friendship.

Laughter there had always been. A few old people remembered times, 25 to 30 years ago, when laughter mirrored love and joy and fullness of life, times when beliefs and rituals and traditions kept a bond with the "millions of years" ago when time began for the Ik. That was when their god, Didigwari, let the Ik down from heaven on a vine, one at a time. He gave them the digging stick with the instruction that they could not kill one another. He let down other people. To the Dodos and Turkana he gave cattle and spears to kill with. But the Ik remained true to their instruction and did not kill one another or neighboring tribesmen.

For them the bow, the net and the pitfall were for capturing game. For them the greatest sin was to overhunt. Mobility and cooperation ever were part of them. Often the netting of game required the collaboration of a whole band of 100 or more, some to hold the net and some to drive game into it. Between the

Rains temporarily turned the Ik's mountain green just before Turnbull returned for a visit.

big hunts, bands broke up into smaller groups to spread over their domain, then to gather again. The several bands would each settle for the best part of the year along the edge of the Kidepo Valley in the foothills of Mt. Morungole. There they were once again fully one with the mountain. "The Ik, without their mountains, would no longer be the Ik and similarly, they say, the mountains without the Ik would no longer be the same mountains, if indeed they continued to exist at all."

In this unity of people and place, rituals, traditions, beliefs and values molded and preserved a continuity of life. All rites of passage were marked by ceremony. Of these, the rituals surrounding death gave greatest meaning to life. Folded in a fetal position, the body was buried with favorite possessions, facing the rising sun to mark celestial rebirth. All accompanying rituals of fasting and feasting, of libations of beer sprinkled over the grave, of seeds of favorite foods planted on the grave to draw life from the dust of the dead, showed that death is merely another form of life, and reminded the living of the good things of life and of the good way to live. In so honoring the dead by creating goodness the Ik helped speed the soul, content, on its journey.

Such were the Ik until wildlife conservation intrud-

ed into their homeland. Uganda decided to make a national park out of the Kidepo Valley, the main hunting ground of the Ik. What then happened stands as an indictment of the myopia that science can generate. No one looked to the Ik to note that their hunter-gatherer way of life marked the epitome of conservation, that the continuance of their way of life would have added to the success of the park. Instead they were forbidden to hunt any longer in the Kidepo Valley. They were herded to the periphery of the park and encouraged to become farmers on dry mountain slopes so steep as to test the poise of a goat. As an example to the more remote villages, a number of villages were brought together in a tight little cluster below the southwest pass into the valley. Here the police post, which formed this settlement of Pirre, could watch over the Ik to see that they didn't revert to hunting.

These events contained two of the three strikes that knocked out the spirit of the Ik. *Strike No. 1:* The shift from a mobile hunter-gatherer way of life to a sedentary farming way of life made irrelevant the Ik's entire repertoire of beliefs, habits and traditions. Their guidelines for life were inappropriate to farming. They seemed to adapt, but at heart they remained hunters and gatherers. Their cultural templates fitted them for that one way of life.

Strike No. 2: They were suddenly crowded together at a density, intimacy and frequency of contact far greater than they had ever before been required to experience. Throughout their long past each band of 100 or so individuals only temporarily coalesced into a whole. The intervening breaking up into smaller groups permitted realignment of relationships that tempered conflicts from earlier associations. But at the resettlement, more than 450 individuals were forced to form a permanent cluster of villages within shouting distance of each other. Suppose the seven million or so inhabitants of Los Angeles County were forced to move and join the more than one million inhabitants of the more arid San Diego County. Then after they arrived all water, land and air communication to the rest of the world was cut off abruptly and completely. These eight million people would then have to seek survival completely on local resources without any communication with others. It would be a test of the ability of human beings to remain human.

Such a test is what Dr. Turnbull's book on the Mountain People is all about. The Ik failed to remain human. I have put mice to the same test and they failed to remain mice. Those of you who have been following SMITHSONIAN may recall from the April 1970 and the January 1971 issues something about the projected demise of a mouse population experiencing the same two strikes against it as did the Ik.

Fate of a mouse population

Last summer I spoke in London behind the lectern where Charles Darwin and Alfred Wallace had presented their papers on evolution—which during the next century caused a complete revision of our insight into what life is all about and what man is and may become. In summing up that session of 1858 the president remarked that nothing of importance had been presented before the Linnean Society at that year's meeting! I spoke behind this same lectern to a session of the Royal Society of Medicine during its symposium on "Man in His Place." At the end of my paper, "Death Squared: The Explosive Growth and Demise of a Mouse Population," the chairman admonished me to stick to my mice; the insights I had presented could have no implication for man. Wonderful if the chairman could be correct—but now I have read about the Mountain People, and I have a hollow feeling that perhaps we, too, are close to losing our "mountain."

Turnbull lived for 18 months as a member of the Ik tribe. His identity transfer became so strong that he acquired the Ik laughter. He laughed at seeing Atum suffer as they were completing an extremely arduous journey on foot back across the mountains and the Kidepo Valley from the Sudan. He felt pleasure at

seeing Lokwam, local "Lord of the Flies," cry in agony from the beating given him by his two beautiful sisters.

Well, for five years I have identified with my mice, as they lived in their own "Kidepo Valley"—their contrived Utopia where resources are always abundant and all mortality factors except aging eliminated. I watched their population grow rapidly from the first few colonizers. I watched them fill their metal "universe" with organized social groups. I watched them bring up a host of young with loving maternal care and paternal territorial protection—all of these young well educated for mouse society. But then there were too many of these young mice, ready to become involved in all that mice can become, with nowhere to go, no physical escape from their closed environment, no opportunity to gain a niche where they could play a meaningful role. They tried, but being younger and less experienced they were nearly always rejected.

Rejecting so many of these probing youngsters overtaxed the territorial males. So defense then fell to lactating females. They became aggressive. They turned against their own young and ejected them before normal weaning and before adequate social bonds between mother and young had developed. During this time of social tension, rate of growth of the population was only one third of that during the earlier, more favorable phase.

Strike No. 1 against these mice: They lost the opportunity to express the capacities developed by older mice born during the rapid population growth. After a while they became so rejected that they were treated as so many sticks and stones by their still relatively well-adjusted elders. These rejected mice withdrew, physically and psychologically, to live packed tightly together in large pools. Amongst themselves they became vicious, lashing out and biting each other now and then with hardly any provocation.

Strike No. 2 against the mice: They reached great numbers despite reduced conceptions and increased deaths of newborn young resulting from the dissolution of maternal care. Many had early been rejected by their mothers and knew little about social bonds. Often their later attempts at interaction were interrupted by some other mouse intervening unintentionally as it passed between two potential actors.

I came to call such mice the "Beautiful Ones." They never learned such effective social interactions as courtship, mating and aggressive defense of territory. Never copulating, never fighting, they were unstressed and essentially unaware of their associates. They spent their time grooming themselves, eating and sleeping, totally individualistic, totally isolated socially except for a peculiar acquired need for simple proximity to others. This produced what I have called the "behavioral sink," the continual accentuation of aggregations to the point that much available space was unused despite a population increase to nearly 15 times the optimum.

All true "mousity" was lost. Though physically they

Anthropologist Colin Turnbull previously wrote *The Forest People,* about African Pygmies.

still appeared to be mice, they had no essential capacities for survival and continuation of mouse society. Suddenly, population growth ceased. In what seemed an instant they passed over a threshold beyond which there was no likelihood of their ever recouping the capacity to become real mice again. No more young were born. From a peak population of 2,200 mice nearly three years ago, aging has gradually taken its toll until now there are only 46 sluggish near-cadavers comparable to people more than 100 years old.

It was just such a fading universe Colin Turnbull found in 1964. Just before he arrived, *Strike No. 3* had set in: starvation. Any such crisis could have added the coup de grace after the other two strikes. Normally the Ik could count on only making three crops every four years. At this time a two-year drought set in and destroyed almost all crops. Neighboring tribes survived with their cultures intact. Turkana herdsmen, facing starvation and death, kept their societies in contact with each other and continued to sing songs of praise to God for the goodness of life.

By the beginning of the long drought, "goodness" to the Ik simply meant to have food—to have food for one's self alone. Collaborative hunts were a thing of the past, long since stopped by the police and probably no longer possible as a social effort, anyway. Solitary hunting, now designated as poaching, became a necessity for sheer survival. But the solitary hunter took every precaution not to let others know of his success. He would gorge himself far off in the bush and bring the surplus back to sell to the police, who were not above profiting from this traffic. Withholding food from wife, children and aging parents became an accomplishment to brag and laugh about. It became a way of life, continuing after the government began providing famine relief. Those strong enough to go to the police station to get rations for themselves and their families would stop halfway home and gorge all the food, even though it caused them to vomit.

Village of mutual hatred

The village reflected this reversal of humanity. Instead of open courtyards around each group of huts within the large compound, there was a maze of walls and tunnels booby trapped with spears to ward off intrusion by neighbors.

In Atum's village a whole band of more than 100 individuals was crowded together in mutual hostility and aloneness. They would gather at their sitting place and sit for hours in a kind of suspended animation, not looking directly at each other, yet scanning slowly all others who might be engaged in some solitary task, watching for someone to make a mistake that would elicit the symbolic violence of laughter and derision.

Australian Aborigines of the Kaiadilt tribe, like the Ik, have suffered debasement.

They resembled my pools of rejected withdrawn mice. Homemaking deteriorated, feces littered doorsteps and courtyard. Universal adultery and incest replaced the old taboo. The beaded virgins' aprons of eight-to-twelve-year-old girls became symbols that these were proficient whores accustomed to selling their wares to passing herdsmen.

One ray of humanity left in this cesspool was 12-year-old, retarded Adupa. Because she believed that food was for sharing and savoring, her playmates beat her. She still believed that parents were for loving and to be loved by. They cured her madness by locking her in her hut until she died and decayed.

The six other villages were smaller and their people could retain a few glimmers of the goodness and fullness of life. There was Kuaur, devoted to Turnbull, hiking four days to deliver mail, taunted for bringing food home to share with his wife and child. There was Losiké, the potter, regarded as a witch. She offered water to visitors and made pots for others. When the famine got so bad that there was no need for pots to cook in, her husband left her. She was no longer bringing in any income. And then there was old Nangoli, still capable of mourning when her husband died. She went with her family and village across Kidepo and into the Sudan where their village life turned for a while back to normality. But it was not normal enough to keep them. Back to Pirre, to death, they returned.

All goodness was gone from the Ik, leaving merely emptiness, valuelessness, nothingness, the chaos of Nun. They reentered the womb of beginning time from which there is no return. Urination beside the

partial graves of the dead marked the death of God, the final fading of Mount Morungole.

My poor words give only a shadowy image of the cold coffin of Ik humanity that Turnbull describes. His two years with the Ik left him in a slough of despondency from which he only extricated himself with difficulty, never wanting to see them again. Time and distance brought him comfort. He did return for a brief visit some months later. Rain had come in abundance. Gardens had sprung up untended from hidden seeds in the earth. Each Ik gleaned only for his immediate needs. Granaries stood empty, not refilled for inevitable scarcities ahead. The future had ceased to exist. Individual and social decay continued on its downward spiral. Sadly Turnbull departed again from this land of lost hope and faith.

Last summer in London I knew nothing about the Ik when I was so publicly and thoroughly chastised for having the temerity to suspect that the behavioral and spiritual death my mice had exhibited might also befall man. But a psychiatrist in the audience arose in defense of my suspicion. Dr. Geoffrey N. Bianchi remarked that an isolated tribe of Australian Aborigines mirrored the changes and kinds of pathology I had seen among mice. I did not know that Dr. Bianchi was a member of the team that had studied these people, the Kaiadilt, and that a book about them was in preparation, *Cruel, Poor and Brutal Nations* by John Cawte (The University Press of Hawaii). In galley proof I have read about the Kaiadilt and find it so shattering to my faith in humanity that I now sometimes wish I had never heard of it. Yet there is some glimmer of hope that the Kaiadilt may recover—not what they were but possibly some new life.

A frail, tenacious people, the Kaiadilt never numbered more than 150 souls where they lived on Bentinck Island in the Gulf of Carpentaria. So isolated were they that not even their nearest Aboriginal neighbors, 20 miles away, had any knowledge of their existence until in this century; so isolated were the Kaiadilt from their nearest neighbors that they differ from them in such heredity markers as blood type and fingerprints. Not until the early years of this century did an occasional visitor from the Queensland Government even note their existence.

For all practical purposes the first real contact the Kaiadilt had with Western "culture" came in 1916 when a man by the name of McKenzie came to Bentinck with a group of male mainland Aborigines to try to establish a lime kiln. McKenzie's favorite sport was to ride about shooting Kaiadilt. His helpers' sport was to commandeer as many women as they could, and take them to their headquarters on a neighboring island. In 1948 a tidal wave poisoned most of the freshwater sources. Small groups of Kaiadilt were rounded up and transported to larger Mornington Island where they were placed under the supervision of a Presbyterian mission. They were crowded into a dense cluster settlement just as the Ik had been at Pirre.

Here they still existed when the psychiatric field team came into their midst 15 years later. They were much like the Ik: dissolution of family life, total valuelessness, apathy. I could find no mention of laughter, normal or pathological. Perhaps the Kaiadilt didn't laugh. They had essentially ceased the singing that had been so much a part of their traditional way.

The spiritual decay of the Kaiadilt was marked by withdrawal, depression, suicide and tendency to engage in such self-mutilation as ripping out one's testes or chopping off one's nose. In their passiveness some of the anxiety ridden children are accepting the new mold of life forced upon them by a benevolent culture they do not understand. Survival with a new mold totally obliterating all past seems their only hope.

So the lesson comes clear, and Colin Turnbull sums it up in the final paragraph of his book: "The Ik teach us that our much vaunted human values are not inherent in humanity at all, but are associated only with a particular form of survival called society, and that all, even society itself, are luxuries that can be dispensed with. That does not make them any the less wonderful or desirable, and if man has any greatness it is surely in his ability to maintain these values, clinging to them to an often very bitter end, even shortening an already pitifully short life rather than sacrifice his humanity. But that too involves choice, and the Ik teach us that man can lose the will to make it."

Blind Lo'ono almost died in a fall on the mountain, to the glee of Ik neighbors. They abandoned her.

Why this scre

GTE, 730 Third Ave., New York, N.Y. 10017

en is blank.

You've seen ads and commercials for color television.

The pictures they show on the sets are very impressive. Rainbow-colored parrots. Dazzling drum majorettes. Bronzed giants on water skis.

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Meaning that what you see cannot quite be the real thing.

Because in the case of an actual picture on a set in a commercial, that picture can only be as good as the set you're watching it on. (Of course, if you're watching on black and white, you can't judge color anyway.)

And in the case of a magazine ad, it's obviously impossible to get a faithful reproduction of an actual television picture on a printed page.

At GTE Sylvania we're particularly concerned about this.

Possibly because GTE Sylvania has now come up with ChroMatrix™—its newest, most advanced picture tube.

By its fineline balance of brightness *and* contrast, the ChroMatrix tube produces a picture that's about as close to real life as you can get.

But you can't see how close this really is by looking at an "idealized" picture in an ad.

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Then, how do you judge?

The truth—and this goes for any color set—is that the only way to judge picture quality sensibly is to see the *actual* picture on the *actual* set (or sets) you're interested in.

We suggest you go to a dealer and see the same picture on 3 or 4 different sets, including Sylvania. Compare color, detail, ease of tuning.

Any other way is at best a waste of time. And at worst, a terrible way to buy a color television set.

GTE SYLVANIA

A part of General Telephone & Electronics.

A bush of *Camellia japonica* in full bloom—in this case the variety Lady Kay—is a gorgeous sight.

By Lacy Bullard

The camellia, one of the Orient's gifts to the West

Frost Queen is a relatively new variety that has withstood temperatures as low as -8 degrees F.

We owe these elegant, infinitely varied flowers to the enthusiasm—and quite often the greed—of the early European traders

Not one of the thousands of beautiful camellias that we grow in greenhouses and gardens today is native to the Western Hemisphere. The story of how they came to the West is marked by romance, scientific curiosity and no small measure of cupidity. It unrolls across the faded pages of botanists' notes and in bills of lading of merchantmen flying the flags of a dozen countries.

The Japanese and Chinese had been cultivating, admiring and utilizing these representatives of their native flora for centuries before European traders arrived on the scene. The newcomers lost no time in collecting and sending home seeds, dried specimen plants and fresh cuttings. Each new species and variety was christened to suit their Occidental fancy; they even renamed the whole genus.

The name *Camellia* was bestowed on it by the great Swedish botanist Carolus Linnaeus, who had not yet seen the plant he was christening. He did so in honor of Georg Joseph Kamel, a Jesuit missionary who probably never saw one either. At least, Kamel mentions no plant identifiable as a camellia in his syllabus of the flora of Luzon, which was published in 1703. He died in Manila in 1706 without knowing that his name in its Latinized form, Camellus, would be immortalized in a botanical label. Linnaeus himself was not born until the following year, and he didn't get around to naming the genus until 1735. His own introduction to it came through the writings of Dr. Engelbert Kämpfer, a German physician who went to Japan in 1690 in the employ of the Dutch East India Company. Kämpfer described 30 varieties of a native plant which the Japanese called *Tsubaki* and which Linnaeus decided to call *Camellia japonica.*

The botanical family to which camellias belong is Theaceae. *Camellia* is only one of Theaceae's nine genuses, and there are nearly a hundred species of it. Most are lovely to look at and some are useful. *Japonica* is the one most commonly grown for its blossoms, but the species that first attracted widespread attention had economic importance. The seeds of some were crushed to make cooking oil and hair dressing. The wood of others was used for weapons. But what the botanists finally called *Camellia sinensis* was the most important of all. It was, and is, grown for its leaves; dried and steeped in water, they make tea.

It is really due to the European traders that so many Oriental plants were introduced to the West. The Portuguese were the first to establish themselves. From a base at Macao they gained a foothold in both China and Japan about the middle of the 1500s. The Spanish, Dutch, French, Russians and English soon followed. Names such as the East India Companies of the Dutch and English evoke an age when the shrewd eye of the merchant often widened in amazement at the exotic beauty he met on the other side of the world.

A part of that beauty was the native flora of the Far East. Ties between botany and medicine were strong in the 16th-century world. Thus it was the physicians

Lacy Bullard began research on camellias several years ago while developing a museum display on the subject for Maclay State Gardens in Tallahassee.

Nancy Mandarich is a very large white camellia with blossoms of the anemone-to-loose-peony type.

This is a *not quite typical* example of the Julia France,

attached to the trading companies who were chiefly responsible for introducing the rich flora of Southeast Asia to Europe. They collected specimens, made detailed notes and sent the information where they thought it would do the most good. But, for the most part, these physician-botanists were not out to collect plants solely for their healing powers, let alone their beauty. The profit motive was not lacking—after all, they were in the pay of the trading companies.

Merchants tried for years to import and grow tea plants in Europe. Oriental suppliers, on the other hand, were reluctant to give up their lucrative monopoly. If they had known how unsuitable were the European climate and economic system for tea growing, they might have spared themselves much effort. But they did not know, and stories circulated about the various subterfuges they used to protect their precious tea trade.

One European merchant reported buying carefully potted tea plants—for a good price, no doubt—that withered a few days out to sea. The "plants" were found to be newly cut twigs stuck in moist earth. Another way to dupe merchants who knew more about bargains than botany was to substitute plants or seeds of ornamental camellias for those of tea. In this way, though sometimes unwittingly, many beautiful camellias came to Europe under the traders' sails.

Garden camellias, those species grown as ornamentals rather than for utilitarian purposes, reportedly graced Buddhist temple gardens in Yunnan, China, centuries before the birth of Christ. More certainly, an 11th-century manuscript describes some 72 varieties of Chinese camellias.

In Japan, however, it was not until the 17th century that ornamental camellias really came into their own. Early in the 1600s a camellia mania, similar to the "tulipomania" that swept Holland about the same time, gripped the populace from royalty to commoner. In 1630 a well-known Buddhist leader, Anrakuan Sakuden, published a pamphlet describing 100 camellias in his own collection. But this period of flourishing interest in camellias coincided with the beginning of Japan's closed-door policy towards foreigners, a policy that prevailed until the mid-19th century. So it was

a large pale pink variety which has fluted petals.

Pink streaked with crimson, Baronne de Bleichroeder is a variation of the Japanese variety Otome.

China, although only slightly less suspicious of aliens, that supplied most of the early Western knowledge of camellias, as well as the plants themselves.

One James Cuninghayme, a Scottish surgeon, went to China in 1704 and sent back hundreds of dried plants, among them what are said to be the first camellia specimens ever seen in Europe. England's first live camellias came from China at an unspecified date prior to 1739. By that time Robert James, eighth Lord Petre, was growing the "Chinese rose" (as it was then called) in his famous garden at Thorndon Hall, Essex. A more important introduction from the standpoint of ornamentals took place in 1792, when Captain Connor of the ship *Carnatic* brought in two new (to England) *Camellia japonica* varieties, Alba Plena and Variegata. These were the first of a number of choice introductions from China that continued through the beginning of the 19th century.

The dispersion of camellias was not limited to direct importation from the Orient, of course. The origin of a large, single-flowered camellia that was noted in Caserta, Italy, in 1819 is not recorded. It was said to date from 1760, and probably came from some source in Europe.

The camellia had spread across Europe and even to Russia by the end of the first decade of the 19th century. In Belgium they were exhibited publicly for the first time at the Ghent Flower Show in 1809. Evidently they caught on, for it was at Ghent in 1848 that Alexander Verschaffelt published the first of the 13 volumes of his *Nouvelle Iconographie des Camellias*. This seems a lengthy treatment of a subject still new to Europe, and apparently it was a thorough one, for it stood as a sort of last word on camellias for nearly a hundred years.

Camellia development in Belgium was given a great boost by Dr. Philipp Franz von Siebold, who was in Japan with a Dutch East India Company scientific expedition between 1823 and 1830. The Japanese relaxed their rules on the segregation of foreigners somewhat for the Dutch, who had never sent missionaries to Japan; and Siebold, an eye surgeon, was given wider latitude on account of his medical services. He took advantage of the opportunity to smuggle out hundreds

This unusual salmon pink hybrid was developed by Dr. W. L. Ackerman of the Department of Agriculture.

of plants, including some *Camellia japonica* scions grafted onto large stock. These ultimately reached a noted plantsman, André Donckelaar, in Belgium. He saved and propagated these grafts, and passed on to the world the varieties Donckelarii and Tricolor.

Camellia distribution depended more on interest and trade relations than on proximity. Australia, relatively near the Asiatic sources of supply, had to wait until 1821 or 1831 (there is disagreement) to import her first camellias, and then they came from England.

When trade agreements in 1859 with England and the United States at last opened Japan to foreigners, that country quickly replaced China as the center of camellia interest. New varieties were "discovered" with amazing rapidity. Most often they were the forms with single, semidouble or anemone-type flowers that the Japanese had developed to such a degree of perfection. The popularity of the formal doubles that had been the favorites for so long in the West soon began to show a definite decline.

Interest in camellia growing spread rapidly in America. A plant of the old single red, sent from England in 1797 to John Stevens of Hoboken, New Jersey, is often cited as the first *Camellia japonica* to reach the United States, but Middleton Place in South Carolina claims an earlier import. This plantation, which boasts of the oldest landscaped gardens in America (laid out in 1741), has had tea bushes since the early days. According to their records, the noted French botanist André Michaux, who had a collecting nursery near Charleston, brought four camellia plants to Middleton Place in 1787, a decade before the New Jersey import. They were planted at the four corners of the main parterre. Three of these, including a lovely Reine des Fleurs, are still thriving in Middleton Place Gardens today. The nearby Magnolia Gardens, where the camellia plantings date from 1848, now has more than a thousand varieties.

David Landreth, who founded the first seed firm in the United States in 1784 in Philadelphia, also made

Daikagura, meaning Great Sacred Dance, is the name of this variety introduced in Yokohama in 1891.

one of the early camellia collections in the country. A branch of Landreth's firm, opened in Charleston in 1818, was an early source of camellias for the South.

In the North, New York and Boston were among the first to become camellia conscious. Philadelphia, too, took to them with enthusiasm and probably produced more plants than any city in the country between 1840 and 1850, even exporting them to Europe. Washington and Baltimore contributed at least ten new varieties to the growing list of American camellias. And in 1852 the first plants reached California, which now has a big camellia industry. Thus, the camellia had spread across the United States from one ocean to the other before the 19th century was three-quarters over.

But then interest began to languish. For one thing, except in the warmest parts of the country, camellias had always been considered greenhouse subjects; and during Reconstruction few could afford greenhouses or hire the labor to maintain them. For another, the

national life-style was changing and tastes in flowers along with it. By the end of the 19th century, camellias were pretty much "out."

They remained in eclipse until the 1930s, when a renaissance began. This may have resulted, in part, from the development of new and hardier varieties. Although they must still be grown under glass in the North, today they are grown in gardens throughout the South, on the Pacific Coast, and on the East Coast as far north as Maryland. (In protected situations, with their own microclimates, isolated specimens have been known to grow and bloom outdoors as far north as Great Neck, Long Island—perhaps farther.) According to W. L. Ackerman, research horticulturist with the U.S. Department of Agriculture, many camellias are quite resistant to physical cold, but they cannot withstand exposure to drying winds and sun when the ground is frozen.

As the number of new varieties has mounted steadily, growers have turned their attention to improving the quality of individual blossoms. The quest for new

Jennie Mills is silvery pink with overtones of lavender, one of the less common colors in camellias.

species continues, too, but under handicaps such as the war in Indochina and political barriers to collecting in southern China—both areas being potentially rich fields for the camellia botanist.

Something really new in camellias need not depend, however, solely on collecting from the wild. The natural color range of the blossoms is from white through shades of pink to red. Few plant breeders could pass up the challenge to improve on that situation. Why not try for a blue and a yellow?

Camellia men in Europe began working for a blue blossom in the early 19th century. They seem to have achieved only some rather muddy shades of purple, unless the lavender-tone camellias found in old Portuguese gardens are the result of these efforts.

The elusive yellow also tantalizes growers. Camellia hunters are poised to start searching, whenever circumstances permit, for three yellow species that have been reported growing wild in Viet Nam. In the West, yellow camellias have been seen from time to time but they have refused to propagate. There was one at England's Kew Gardens in 1859; and more than a century later, in 1962, the *New York Times* reported clear yellow blossoms on a camellia in a garden in Macon, Georgia.

Even more recently, in 1964, a blossom with a yellow border on its white petals was discovered by Ann Moreton on an Alba Plena sport, Fimbriata Alba, at Chinquapin Farm near Ocean Springs, Mississippi (page 42). She asked a friend, J. Y. Christmas, to graft the branch that had produced the prize. It was cut into some 20 two-inch pieces, which were grafted onto old and sturdy stock. All the grafts died except one, which flourished for several years (although it never produced another yellow-bordered blossom). Unfortunately, it was a victim of the devastating hurricane that hit that section of the Gulf Coast in 1969.

By coincidence, the storm was named Camille.

Lady Clare is a very widely grown variety, first introduced into England from Japan in 1887.

Camellia hongkongensis can grow up to 30 feet, has leaves that are purple when young.

This is a photograph of the unique yellow-bordered blossom discovered at Chinquapin Farm in 1964.

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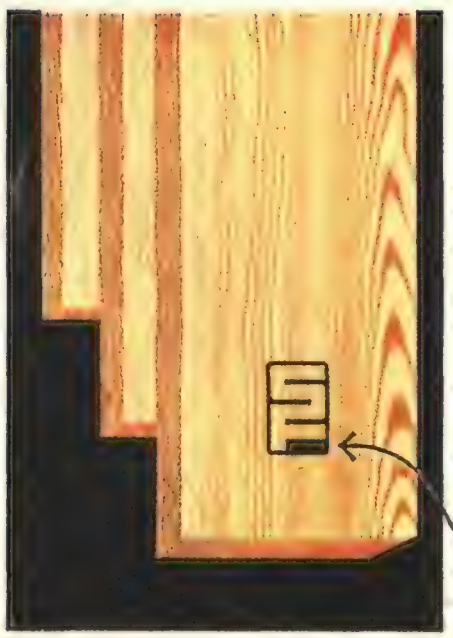

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By Robert Hilton Simmons

Neglected work of a once-famed Yankee artist comes to Washington

A wealth of sculpture and memorabilia from Hiram Powers' Florence studio goes on view at the National Collection of Fine Arts

The sensation of the greatest industrial world's fair of its time was a demure and naked maiden in chains—carved in glistening marble by Hiram Powers, an enterprising American sculptor who kept a thriving studio in Florence, Italy.

Queen Victoria herself opened the fair from a temporary throne with imperial pomp and ceremony. After the speeches and the trumpet flourishes, a band, an organ and a massive choir joined in Handel's "Hallelujah Chorus" as the royal party viewed the exhibits. The fair, housed in a magnificent cast-iron-and-glass structure made possible by the latest advances in engineering, and known popularly as the "Great Crystal Palace Exposition," was dedicated officially to industrial progress, the newest hope of mankind.

The year was 1851, the exact pivot of the century. The place was London, capital of the greatest empire on earth. And the toast of the town—literally cheered at fashionable dinner parties—was *The Greek Slave* (right), a neoclassical sculpture symbolizing the triumph of spiritual virtue over brute physical power.

A last-minute surprise entry, the sculpture had saved the U.S. section from disaster. Although the American commission had reserved one of the largest areas in the

The Corcoran Gallery of Art, Washington
Gift of William W. Corcoran

The plaster model (opposite) of the most renowned 19th-century American sculpture, *The Greek Slave* (right), has come to the Smithsonian.

enormous pavilion, after all the machinery and assorted contraptions had been set up it was found that the section was half empty. One division of exhibits, however, not yet fully exploited, was that of "Sculpture and the Fine Arts." In this category the Americans were showing, among other things, a group of daguerreotypes and a cathedral window made up of transparent colored soap.

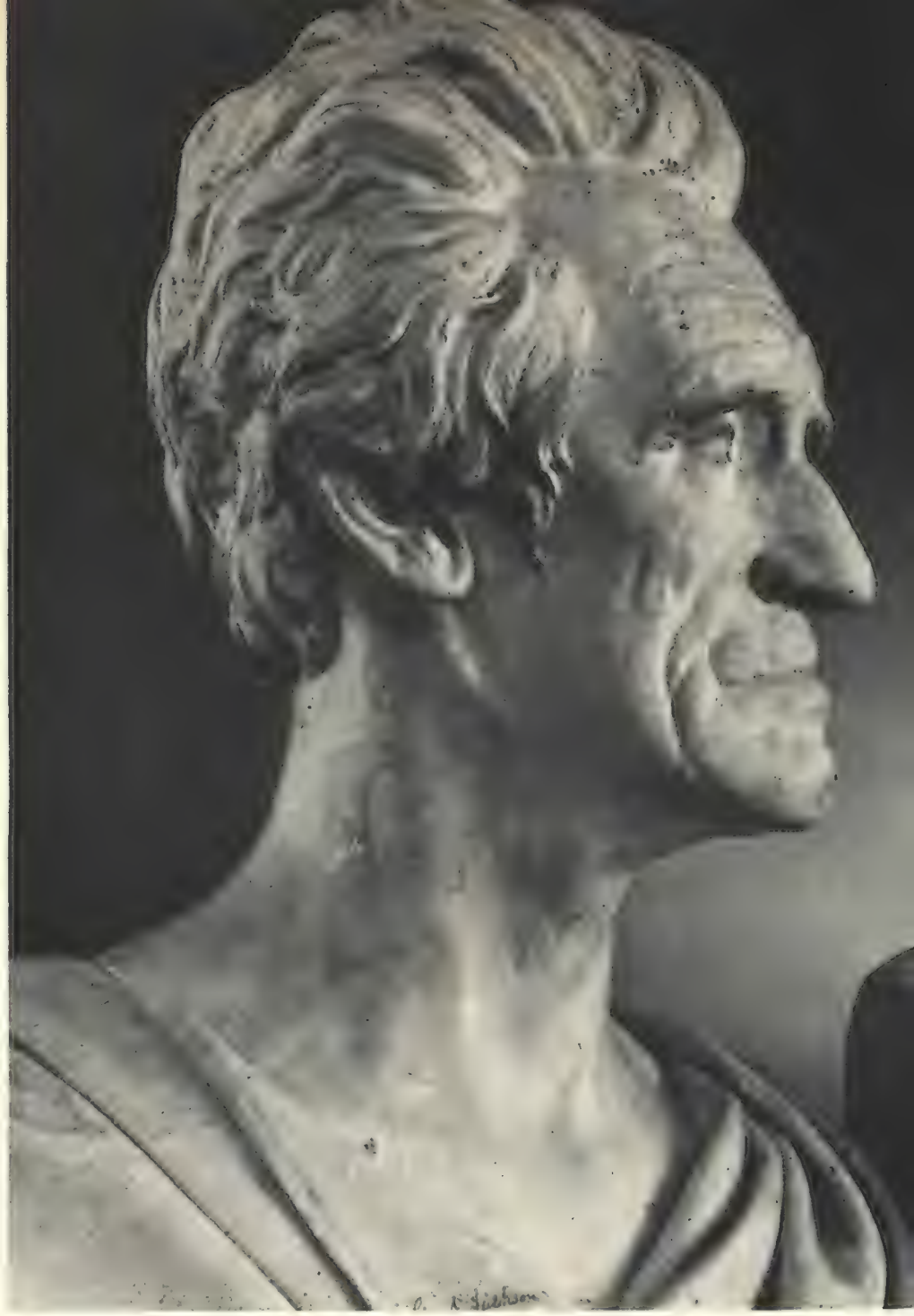
A week before the Exposition was to open, one of the American commissioners, remembering the unusual interest aroused by a certain American sculpture on a tour of the States a few years back, and realizing that a replica was right there in England, wrote the owner asking to include it in the American department. Permission granted, *The Greek Slave* was on station in time to greet the Queen, the Prince Consort and the throngs of bug-eyed visitors who followed.

At a time when ladies kept their ankles covered in public, the Greek maiden's all-the-way bareness was a shock in itself. Standing amid the latest mechanical contrivances of industry, she was as startling as a nude centerfold in *Popular Mechanics* magazine. Her revolving pedestal was a concession to the purpose of the fair, but to the industrial hucksters who were sponsoring the show she needed no excuse. Her clear demonstration of how to sell machinery was never to be forgotten. As for American sculpture, *The Greek Slave* had spun it into world attention without precedent.

Elizabeth Barrett Browning even wrote a sonnet:

An alien image with enshackled hands,
Called the Greek Slave . . .
. . . appeal, fair stone,
From God's pure heights of beauty against man's wrong!

Robert Hilton Simmons, a free-lance writer, is currently preparing a book on federal art programs.



The plaster portrait busts of President Andrew Jackson and Vice President John C. Calhoun still

That same year it was possible for a Congressional committee, reporting on Hiram Powers to the House of Representatives in Washington, to assert: "Among living artists the name of none stands higher or is more inseparably interwoven with our national reputation."

In a period when it was generally doubted that there was such a thing as American art, Hiram Powers had brought it the acclaim of Europe. From the Vermont farm where he was born in 1805 to the Crystal Palace was in that day a considerable distance spiritually as well as in miles. Forced by financial misfortune to leave the farm, the Powers family had arrived in Cincinnati, then a bustling frontier town, in 1819.

There the young Hiram soon went to work, his mechanical talents taking him into the repair shop of a mechanized wax museum. Called upon to mend and sometimes create the wax figures, he revealed an artistic talent that brought him to the attention of Frederick Eckstein, a German sculptor and teacher. After a period of study, Powers set up his own portrait-bust studio. Among his first clients was Nicholas Long-

bear metal pins that Powers inserted as guides for transferring the measurements onto marble.

worth, a millionaire art patron who became his lifelong friend. With Longworth's help and letters of introduction, Powers and his recent bride moved in 1835 to Washington, D.C.

In the Federal City he repaired plaster casts, designed a marble fountain to go under the steps to the Capitol Rotunda, employed his forthright charm and talent to secure sittings with the President, an ex-President, an ex-Vice President, the Chief Justice and sundry lesser lights, one of whom helped stake Powers to a trip abroad, a necessary step to success in the arts according to the tradition of the day.

With his wife and two children Powers embarked for Florence in October 1837. He was never again to return home.

By mid-century, the Florence studio of Hiram Powers was one of the major social centers of an expatriate arts community that included some of the period's most notable American and English names, among whom Robert Browning and his poetess wife were perhaps at the head. Practically everyone of any eminence who passed through Florence made a point of stopping to pay their respects to the master, sometimes staying over to have a few sittings for a portrait bust, which cost about $1,000 a head.

In their wake came culture-bent travelers of more modest reputation but equal means, who, on a tighter schedule, would take away an expensive ready-made "ideal" bust in Carrara marble, always resembling *The Greek Slave* in facial details but variously representing Proserpine, Evangeline or some other paragon, to be placed on the piano in the parlor or donated to the home-town library.

In the workshops behind his studio and out at the quarries Powers employed a contingent of artisans who were kept busy chiseling out the more popular items. It has been estimated, perhaps an exaggeration, that some four dozen busts of Proserpine alone, selling at around $500 apiece, found their way across the Atlantic. Powers put his personal finishing touches only on the more important pieces. Of the six replicas of *The Greek Slave* that were turned out, all apparently received close attention from his own hand.

A Yankee to the end

Coming in abruptly from the Renaissance streets of the city, the visitor was greeted by a strange spectacle—a tall, white-whiskered Yankee stonecutter, surrounded by the intense faces of some of the most noted American public figures of the period and, in the corner, the innocent *Eve* contemplating not only an apple, but, beyond it, the mischievous if not lecherous, old Ben Franklin. Although unnerving, perhaps, to the uninitiated visitor, the ménage was reassuring to Powers.

Despite the heady Italian surroundings—or perhaps because of them—Powers never lost his American identity. He remained a Vermonter in his moral point of view and in his speech, refusing to learn Italian. Although admitting the quality of certain dishes in the local cuisine, such as acacia blossoms sautéed in olive oil, he found it generally flat, and he preferred Ohio wine to such a degree that he had it shipped over in cases. He often spoke of the urge to go home again, but it was evident that he had everything he needed right there in Florence.

To those who knew him, Powers' conversation was as fascinating as his art, and as prodigious. The "millstream of his talk" was amply recorded by Nathaniel Hawthorne, who spent the summer of 1858 in Florence, filling his journal with impressions from which later emerged his last major novel, *The Marble Faun.*

At various times Powers spoke of Swedenborgian theology, the construction of organs, the possibility of life on other planets, the certainty that men would somehow build successful flying machines and, of

course, the tempering influence of really good wine.

And art.

The sculptor—dressed, according to Hawthorne's son, in a "long, linen pinafore" and a "cap made either of paper, like a baker's, or, for dress occasions, of black velvet"—had trenchant comments to make on the work of both the ancient masters and his contemporary competitors. After one freewheeling discussion, Hawthorne observed that Powers had said enough "to put him at swords' points with sculptors of every epoch."

On the subject of portrait busts, Powers noted that the late, great Antonio Canova, the lion of Rome, put his own likeness into all that he did. And most of Powers' American contemporaries could not produce a good one; his Florence neighbor, Joel T. Hart, and, in all modesty, he himself, were the only portrait sculptors truly worth their salt.

Powers took Hawthorne considerably aback by launching a critical assault on the *Venus dei Medici,* a Greek masterpiece of *circa* 300 B.C. and the jewel of the Uffizi gallery. Hawthorne had spent much time admiring the marble *Venus* and he could not have been more surprised if Powers had declared that Queen Victoria was really flat-chested. Although Powers approved of *Venus'* body and, indeed, used it as a model, he objected to the head. Examined closely, he said, the eyes were totally unnatural, more like buttonholes. The ears were too low, the forehead was badly proportioned and, furthermore, the mouth, no matter how one looked at it, was all wrong. The sculptor then showed Hawthorne one of his own marble heads—a Proserpine, as luck would have it—which demonstrated how these features should properly be carved. Hawthorne, although not wholly convinced, could never again quite enjoy looking at the *Venus dei Medici.*

At least a decade before his idealized Greek maiden in handcuffs had brought him world fame, Powers had become widely known for his portrait busts. In his portraiture—according to some critics his most lasting contribution to American art—Powers rejected any suggestion of idealism, agreeing with the aging President Andrew Jackson, whose "likeness" he had taken in a series of sittings at the White House in 1835. Powers had offered one day, following a pointed suggestion from a concerned aide of the General's, to make the emerging clay head look a bit younger.

"Make me as I am, Mr. Powers," Jackson retorted. "I have no desire to look young as long as I feel old. . . . The only object in making a bust is to get a representation of the man who sits. . . . If he has no teeth, why then make him with teeth?"

Reality was served, and the result was a forceful, almost pugnacious portrait (page 48). Of the marble bust of Jackson, now in New York's Metropolitan Museum of Art, the late art scholar Albert Ten Eyck Gardner, not usually a Powers champion, noted that it epitomized "all that is best in the American portrait

Powers used special tools on *The Last of the Tribe* (1870), shown above and in detail opposite, to give the marble Indian maiden a glistening surface.

sculpture of the period, just as his *Greek Slave* seems to embody all that is meretricious."

Although Powers sought realism, he disdained naturalism and scoffed at the work of one English sculptor who was coloring marbles with wax to imitate flesh. It reminded him of the Cincinnati wax museum. For serious art, Powers insisted that "everything in intellect or feeling can be expressed as perfectly, or more so, by the sculptor in colorless marble, as by the painter with all the resources of his palette." Powers had once proposed expressing a transient blush in marble, providing first a painter depict it convincingly in a picture. The challenge was not accepted.

Having achieved success at portraiture, Powers judged himself ready to start producing "fancy pieces," the mythological figures and personifications of the verities for which the neoclassical masters, such as Canova and Bertel Thorvaldsen, were paid the highest prices and given the greenest laurels.

To create his idealized figures, Powers went for inspiration directly to the ancient Greek and Roman masters. Shortly after he arrived in Florence, the personable young sculptor had been allowed by the Grand Duchess to take a cast of the Uffizi's *Venus dei Medici*. Powers had made two full-sized plaster models and he now put them on pedestals in his studio as a kind of bureau of standards from which to gauge his own success in capturing the ideal and officially approved female shape.

With one eye on the plaster *Venus* and the other on the 17-year-old daughter of his wife's seamstress, whom he employed as a model, Powers set to work. He first produced his *Eve Tempted,* followed by *The Greek Slave,* which was put into marble and carried off to London where, after a round of triumphs, it ultimately reigned at the Crystal Palace.

A replica of *The Greek Slave* (now owned by the Corcoran Gallery of Art in Washington, D.C.) was taken to the United States in 1847 by Miner Kellogg, an enthusiastic art promoter whom Powers had known

in Cincinnati. For nearly three years, Kellogg exhibited the stellar attraction in the cities and backwoods for admissions finally totaling $23,500.

In some localities the question of immodesty was raised, but Kellogg, with foresight worthy of P. T. Barnum himself, had published a descriptive brochure (available at a small charge) that included testimonials from certified ministers guaranteeing that "cloth of gold could not be a more complete protection than the vesture of holiness in which she stands."

Powers also wrote a brief backgrounder for the tour, reminding his suspicious countrymen that the subject derived from the Greek war of independence from Turkey, which had ended in 1830. "The Slave has been taken from one of the Greek Islands by the Turks," Powers wrote. "Her father and mother and perhaps all her kindred have been destroyed by her foes, and she alone preserved as a treasure too valuable to be thrown away. She is now among barbarian strangers . . . and waits her fate with intense anxiety, tempered indeed by the support of her reliance upon the goodness of God. . . ."

The forewarning worked. Even in the crudest of country towns lewd guffaws were kept to a minimum.

The Carrara quarries produced an unbroken procession of fancy pieces following these initial successes and the resultant publicity. *Eve* was followed by *California,* symbolizing the lure and deceit of the gold rush, and *Eve Disconsolate,* his only sequel piece. Powers kept a marble replica of *Eve,* possessing a new and fleshlike surface he had developed, in his studio as a kind of floor sample to show prospective customers what his finest merchandise had to offer.

Another famous marble figure, his symbolic *America* (page 52), was kept for years in a corner, crated for shipment, awaiting from Washington an ever-expected call that never came. Powers had hoped that she would reign in some marble hall of the Capitol, while a colossal version in bronze would grace the peak of the projected new dome.

Powers had completed the plaster model by 1851, when a House of Representatives committee recommended the purchase. Powers' design was described in a report to the 31st Congress as "an embodiment of the idea of free, popular, and well-regulated government, in the person of 'America,' represented as a youthful female of perfect beauty, and draped in the chaste and graceful style of the ancient divinities. . . . In the healthful development of the figure, and the grace and beauty of limb and feature, it is intended to typify the strength, harmony, and hopeful promise of our political system."

But Powers' hopes were not to be realized. When the colossal bronze lantern-figure was finally hoisted to the top of the new Capitol dome in 1863, it was not Powers' *America* but Thomas Crawford's *Liberty* that had won the throne. Powers ultimately shipped the marble version of *America* to the States, where it went into storage in a Brooklyn warehouse and was consumed in a fire.

Hiram Powers died in 1873, active almost to the last and still regarded by an admiring public as America's foremost neoclassical sculptor—he was even called "the Canova of America."

A plaster model of Powers' symbolic figure of *America* (left) is one of the prizes found among the contents of his studio, cached for some years in a Florence storeroom (opposite).

Fashions were already changing, however. The center of the art world was shifting away from Italy toward France. Neoclassical sculpture was soon to be eclipsed by Rodin's impressionistic bronzes, and in the excitement of the 20th century's tumultuous changes of style it was virtually forgotten.

But in the last half-decade, Hiram Powers' luck suddenly reasserted itself.

In January of 1968, a tremendous shipment of cases from Florence arrived at the new galleries of the National Collection of Fine Arts in Washington, a museum of the Smithsonian Institution. In the cases were the entire contents of Hiram Powers' studio—126 pieces of sculpture in plaster and marble, handwrought tools and memorabilia.

The hoard had been discovered in a Florence storeroom where it had come to rest after years of neglect in Florentine villas. Purchased by the NCFA, the incredible collection, scheduled to go on view late in December, is an especially prized addition to the wealth of 19th-century American art in the nation's capital.

Among the newly acquired works are such major marbles as *Eve Tempted* and *The Last of the Tribe.* But the collection is especially rich in the original plaster models of all the old favorites, just as they came from the master's hand. The plaster prototypes of the portrait busts of President Jackson, John Quincy Adams, John C. Calhoun and a host of others, all have come home to Washington, along with the original plaster versions of *The Greek Slave* and—perhaps most welcome of all to her intended home city—the resplendent and beautiful *America.*

Photographs by Robert C. Lautman

The opulent new-old Renwick

The latest addition to the Smithsonian's complex of museums is a fine example of intelligent restoration and re-creation

The ideal museum structure is currently thought to be something that doesn't compete with the exhibits. That was far from the case in 1858, however, when architect James Renwick jr. designed the first Corcoran Gallery of Art in Washington (see SMITHSONIAN, February 1972). The building was meant to look sumptuous, and it did. And if the galleries, with their cozy clutter of paintings and objects, also looked a bit like the Old Curiosity Shop, so did most interiors of the day. It was, in short, the Last Word.

But then it fell on evil days. When the Corcoran moved out in 1899, it was handed over to the U.S. Court of Claims; and when the Court moved out in 1964, it was handed over, more or less, to the pigeons.

Today it is back in business as the Smithsonian's newest museum. Renovated, restored and renamed the Renwick Gallery, it is now a showcase for American creativity in crafts, design and the decorative arts. Since it was no longer possible to restore the interior exactly as it was in every detail, the effort has been to re-create it in the spirit of the time. Thanks to intelligent scholarship and, in some measure, the restraint of contemporary taste, the rooms—as these recent photographs show—are probably even more elegant than they were originally.

The most spectacular are the Grand Salon (right) and the Octagon Room (cover), in the center of which once stood Hiram Powers' *Greek Slave* (page 47). Together with the changing exhibits, they make the Renwick a rewarding addition to Washington's museums.

The proportions of the spacious Grand Salon make it one of the handsomest rooms in Washington. Hanging on the plum-colored walls are paintings from W. W. Corcoran's original collection.

Renwick's plans called for a white marble staircase, but it was eventually finished in cut brownstone.

In the upper hall one looks across to the Octagon Room and, down the stairs, to the entrance.

The bay-windowed, high-ceilinged hall behind the staircase has been renamed the Palm Court.

A gallery with paired Corinthian columns at each end now houses an exhibit called "Design is . . ."

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			Vol.
1972	OCT. 21	CARIBBEAN/MEXICO/TRANS-CANAL—20 DAYS	II
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	MAY 16	SUNNY EUROPEAN—19 DAYS	I

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By Joseph Barry

Travels with Tocqueville: Traces of his America persist

Alexis de Tocqueville: ". . . small, dignified and reserved, delicate of feature and body."

A young Frenchman lost his heart to the young republic of 1830. Today his notes elicit recognition from our matronly nation

As political computers and campaigners calculate the various doomsdays facing us, it is the best of times for a fresh look at a famous young traveler in 19th-century America. He described his experiences, discoveries, hopes, fears and predictions. To wit:

"For a long while before the appointed time has come, the election becomes the important and, so to speak, the all-engrossing topic of discussion. Factional ardor is redoubled. . . . [The President] no longer governs for the interest of the state, but for that of his re-election. . . . The citizens are divided into hostile camps . . . the election is the daily theme of the press, the subject of private conversation, the end of every thought and every action. . . ."

Thus Alexis de Tocqueville speaks directly to us in his classic *Democracy in America,* though it was published for the French in 1835. Repeatedly this young aristocrat, who was not 26 when he landed on our shores and who left before he was 27, addresses our condition, our minds, our admiration. Above all, for those who think this the worst of times, Tocqueville's words of optimism and hope are worth recalling:

". . . The great advantage of the Americans consists in their being able to commit faults which they may afterwards repair." And later, ". . . Perhaps, after all it was God's wish to spread a mediocre happiness throughout mankind, and not to concentrate a great amount of happiness on a few and bring a small number near to perfection."

He was small, dignified and reserved, delicate of

Drawings by Paul Hogarth

Arrival of the steamship *Arctic* recalls Tocqueville's words: "No sooner do you set foot on American ground than you are stunned by a kind of tumult." The notation is as apt today, attested by anyone who has alighted on this soil amid the chaos of an international airlines terminal (at right).

feature and body. He was Alexis Charles Henri Clérel de Tocqueville, born on July 29, 1805. His father was a member of the minor nobility of Normandy. His grandfather had been guillotined during the Revolution, his father and mother imprisoned. When he was born, Napoleon was mobilizing for victory at Austerlitz. After Waterloo, his father served the restored Bourbon dynasty as departmental prefect.

Alexis studied at the lycée in Metz. He discovered the agnostic works of the *philosophes* in his father's library and at 15 his Catholic faith was shaken, though not shattered. He remained religious, if without dogma. He studied law in Paris and at 21 began a career as *juge auditeur* in the court at Versailles, where his father was now a count. He had the independence of lifetime doubt and met a like-minded young nobleman and fellow magistrate of similarly liberal principles, Gustave de Beaumont.

Together the young Frenchmen attended François Guizot's lectures, listening to the future statesman expound on the march of the middle class to ascendent power. Clearly for them the Bourbon monarchy of Charles X had no program for a modern France and when the Revolution of 1830 occurred, they both accepted, if they did not welcome, his Orleanist successor, Louis Philippe, the "bourgeois monarch." "At war with myself" (his father and class were Bourbonist), Tocqueville took the oath of allegiance, as did Beaumont, but was suspected, quite rightly, of deep reservations, and he was demoted in the magistracy.

Mr. Barry has written Passions and Politics *and also* Smithsonian *articles. Paul Hogarth illustrated our Royal Dublin Society story in August 1971.*

The two petitioned to depart for America to study prison reforms. "I have long had the greatest desire to visit North America," Tocqueville explained in a letter. "I shall go see there what a great republic is like; my only fear is lest, during that time, they establish one in France."

Permission was granted. The young Frenchmen collected letters of introduction from Tocqueville's illustrious cousin, Vicomte de Chateaubriand, who had been to America, and solicited others from Beaumont's even more famous cousin, the Marquis de Lafayette. They packed. Tocqueville's baggage included two hats (one silk), five pairs of boots, a fowling piece and, one might declare, a French genius for analysis, synthesis and generalization. Beaumont took along two sketchbooks, his flute and a gun as well.

They sailed on the *Havre* on April 2, 1831, and at sea Tocqueville practiced his English with a pretty American girl. They landed May 9 at Newport and noted four or five banks clustered in the small town. Truly, Americans appeared a commercial people. The big steamer that took them to New York was their first impression of America's magnitude and power. Excitement had allowed them little sleep. "No sooner do you set foot upon American ground than you are stunned by a kind of tumult," he wrote later in *Democracy*.

They read in the New York *Mercantile Advertiser* that "two magistrates"—one of them Tocqueville—had been sent by their French government "to examine the various prisons in our country, and make a report on their return to France." The story was picked up in papers from Boston to Baltimore, and beyond. "Our arrival in America," Beaumont wrote home, "has *created a sensation. . . .*" It was the America of Andrew

Jackson's first term, a young raw republic of 13 million (less than half the population of France) with its 24 states almost entirely east of the Mississippi. William Lloyd Garrison had just begun his abolition crusade, temperance societies were springing into being, and James Fenimore Cooper was Europe's conception of an American writer.

On May 13, the governor of New York received the French visitors in the parlor of the boarding house where he stayed when in New York. "The authorities," Tocqueville wrote his mother, "seem extraordinarily approachable."

They were wined and dined, and they winced at the inevitable toasts to Lafayette, whom they deemed an irresponsible demagogue at home, and perhaps at their hostesses' invariable turn at the piano. When they traveled on invitation to the new prison of Sing Sing, in their eagerness they forgot to take their guns for the fine hunting in that vicinity. (America's prisons, they found, were penitentiaries, that is, places for penitence and reform, not simply as in France for punishment.)

Put off initially by the "national conceit" (Tocqueville's phrase), they soon warmed as the free-and-easy democratic air affected them—as it had, they concluded, the national character. ". . . The smallest conversations are instructive," Tocqueville wrote to his father, "and we can say there is not a man, on whatever rung of society he finds himself, who cannot teach us something." To a friend: ". . . I envy this people . . . the ease with which they do without government."

They covered thousands of miles of America and part of Canada. Doggedly Tocqueville drove his frail body the great distances. Between Albany and Buffalo he brooded over the fate of the Indians he met. "One might say that the European is to the other races of man what man in general is to the rest of animate nature. When he cannot bend them to his use or make them indirectly serve his well-being, he destroys them."

He saw in the pioneer "the representative of a race to which belongs the future of the new world," if not the entire world, because of his "perseverance and a scorn for life," his single-minded drive for wealth and land. And if the young French nobles met swarms of mosquitoes on their way through the wilderness to Saginaw, Michigan, they also boated on the Great Lakes when their waters were so clear they could follow a white, peeled potato dropped by a crewman down to a depth of 40 feet. And there is another nostalgic note in Tocqueville's diary: "In the steamboats we at first wanted to give a tip to the steward. [Fellow passengers] prevented us, claiming that this would be to humiliate him."

Back in Boston, Beaumont reflected in a letter that "people throw themselves less at the head of strangers than in New York"—and both Frenchmen, as a consequence, felt at home. But Bostonian doors opened soon enough to fellow aristocrats, and they stayed for three-and-a-half weeks. They met Daniel Webster

"Hard Cider" campaign of 1840 and modern dispute between longhair and hard-hat (opposite):

"The election becomes the . . . all-engrossing topic. . . . The citizens are divided into hostile camps."

(who "cares only for power," Tocqueville quickly concluded), John Quincy Adams, William Ellery Channing, Edward Everett. Jared Sparks first suggested the possibility of a "tyranny of the majority" in a democracy, but he also indicated the political importance of the township, "founded," Sparks said, "before the [American] state."

Meticulously the travelers composed questionnaires which they presented or mailed to all who might illuminate America for them. From John Quincy Adams, Tocqueville learned the importance of the open lands of the west for siphoning off the discontented, and it would lead to his anticipating historian Frederick Jackson Turner on the influence of the frontier in American history.

Baltimore was the travelers' first contact with the South and the "problem" of the blacks, which Tocqueville swiftly recognized as primarily the problem of the whites. Contrasting the prosperity and enterprise of a free Ohio with the backward condition of adjacent slave Kentucky, he would write that slavery, if it brutalizes the black population, more gravely debilitates the white. Bleakest of Tocqueville's prophecies is his prediction of conflict:

". . . I do not regard the abolition of slavery as a means of warding off the struggle of the two races in the Southern states. The Negroes may long remain slaves without complaining; but if they are once raised to the level of freemen, they will soon revolt at being deprived of almost all their civil rights. . . ."

The black plus the Indian dilemma of America would be Beaumont's impassioned subject in a semi-documentary novel, *Marie, or Slavery in the United States* (to translate the title of a work never published in English). Meanwhile the remarkable French travelers would toil along the roads and trails from Philadelphia to Pittsburgh and Cincinnati. (There were but 23 miles of railway in the America of 1830, although by 1840 there would be 2,800.) They walked all day through six inches of snow in Kentucky, crossed the Tennessee river through drifting ice.

Communications worked back then

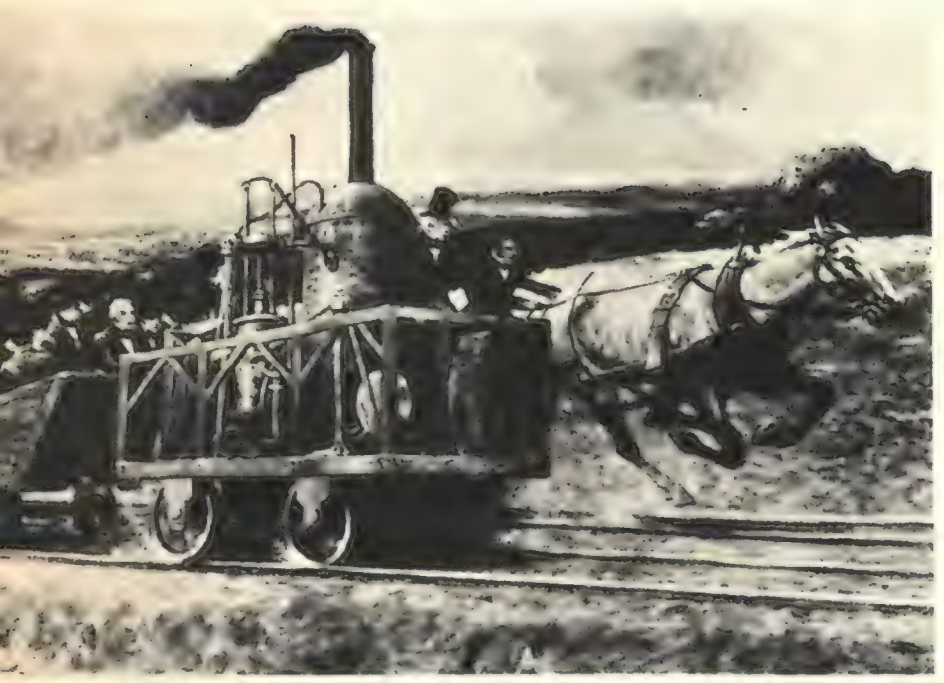
But they were impressed (another nostalgic note) by American communications: "Of all the countries of the world," Tocqueville would write, "America is the one where the movement of thought and human industry is the most continuous and swift."

On the way to New Orleans they listened to Sam Houston; in Washington they were unimpressed by Andrew Jackson; and finally they went on to New York, where they boarded the boat for France, February 20, 1832, having spent nine months in America. Back home they encountered cholera and indifference. Beaumont was dismissed from his magistracy and Tocqueville indignantly resigned his. However, their prison report, published in 1833 spurred controversy over the need for penal reform in Europe.

In January 1835, Part I of Tocqueville's *De la démocratie en Amérique* (Concerning Democracy in America) appeared. The acclaim was gratifying and general, not only abroad, but at home. A more philosophical Part II would be published five reflective years later.

Just after the publication of Part I, Tocqueville revealed his purpose in a letter to a friend: "To those who [have fancied] an ideal democracy, a brilliant vision which they think easy to realize, I undertook to show that they have arrayed their future in false colors; that the democratic government they advocate can . . . only be maintained on certain conditions of intelligence, private morality, and religious faith which we do not [as a nation] possess. . . .

"To those for whom the word *democracy* is synonymous with disturbance, anarchy, spoliation, and murder, I have attempted to show . . . that, if democratic



Pioneer American steam locomotive "Tom Thumb" races a horse in 1830, the year Tocqueville noted that open competition produces a restless society. Today, grass grows through Chicago tracks (right) as a jet flies above: In a subtler sense, the Frenchman's thoughts are still as valid.

government is less favorable [than other governments] to some of the finer parts of human nature, it has also great and noble elements. . . ."

Democracy in America (Tocqueville's own title is more tentative) reveals that by *démocratie* the author invariably meant equality, popular rule, representative government and even participatory democracy. Only an intelligent, alert citizenry, he insisted, might prevent a democracy from falling under "the tyranny of the majority" or from its surrender to a demagogue ruling by plebiscite as "guardian" of the people's welfare. (" 'The danger for a democracy' is not the tyrant but the good shepherd." Thus Pierre Mendès-France, in the time of De Gaulle, would loosely quote Tocqueville.)

Religious belief and private morality were, for Tocqueville, the societal restraints when power is the people's. They would moderate the rashness or injustice of the majority. How then might the state encourage morality in the people of a democracy? By the example of moral government, Tocqueville replies.

"My answer," he wrote in Part II of his work, "will do me harm in the eyes of politicians." And one reads on with the routine political prayer meetings at the

White House in one's mind: "I believe that the sole effectual means which governments can employ in order to have the doctrine of the immortality of the soul duly respected is always to act as if they believed in it themselves; and I think that it is only by scrupulous conformity to religious morality in great affairs that they can hope to teach the community at large to know, to love, and to observe it in the lesser concerns of life."

Tocqueville makes an important distinction between centralized or federal *government* and decentralized or local *administration*. "The partisans of centralization," he wrote, "maintain that the government can administer the affairs of each locality better than the citizens can do it for themselves. . . . But I deny that it is so when the people are as enlightened, as awake to their interests, and as accustomed to reflect on them as the Americans are." These capacities, he felt, grew only with their local exercise: "Town meetings are to liberty what primary schools are to science; they bring it within the people's reach, they teach men how to use and how to enjoy it." The jury system, too, he held, served the same purpose.

Above all, Tocqueville was a believer in the freedom of the individual. He had a view verging on the tragic of the individual in unequal combat with society—wherefore his insistence on decentralization to give the individual a fighting chance. His experience in America persuaded him that here were the elements of a model for the world: federal government and local administration, judicial review by an independent judiciary, private morality and the daily practice of self-rule and self-responsibility; also, a free press.

He foresaw "tyranny of the executive"

Tocqueville visited America before the extension of Presidential powers. But he was farsighted enough to quote Thomas Jefferson on both aspects of American government: "The tyranny of the legislature is really the danger most to be feared, and will continue to be so for many years to come. The tyranny of the executive power will come in its turn, but at a more distant period." It was the egalitarian aspect of democracy —the sense of its leveling down rather than up—which disturbed Tocqueville. He finally defended it as the spreading of general welfare versus the heaping of culture and fortune upon the few. Yet Tocqueville's taste, training and instinct were elitist. He deplored, as he traveled through Tennessee, the election of "an individual named David Crockett," who could barely read or write. But he was resigned to the victory of middle-class democracy at the inevitable price of lowered culture, customs and manners.

However, Tocqueville's attitude towards the future of culture requires a closer look than usually accorded. "I think that in no country in the civilized world is less attention paid to philosophy than in the United States," he begins Part II. But he immediately swings into an analysis of the self-reliant character and mind of the American (he had not met Emerson on his trip, then obscure, a slow ripening 28) and concludes, "America is therefore one of the countries where the precepts of Descartes are least studied and are best applied."

Similarly Tocqueville looked freshly at the churning that was America, the "restless ambition that equality

begets," the "number of those who cultivate science, letters, and the arts," the stirring of the "intellectual world . . . into prodigious activity . . . ," the creation of the audience and marketplace for a science, literature and art. He foretold a new American language and poetry in which Man would be the theme—and within the next decade Whitman would be singing the continental, mind-blowing adventure of the American.

As for the consumer society (as we, not he, term it), other than as audience, Tocqueville was far less sanguine. He remarked the dark streak in American prosperity, the restlessness created by an open, competitive society, of the melancholy of its beckoning "image of chance . . . open to ambition." When the American is not urged on by his wants, he noted, he is at least by his desires, for of all the possessions that he sees around him, none are wholly beyond his reach.

In a democracy, Tocqueville continues, "men easily attain a certain equality of condition, but they can never attain as much as they desire. It perpetually retires from before them, yet without hiding itself from their sight, and in retiring draws them on. . . . To these causes must be attributed that strange melancholy which often haunts the inhabitants of democratic countries in the midst of their abundance, and that disgust at life which sometimes seizes upon them in

Tocqueville mistrusted the overweening materialism that even then marked the American dream.

He found a melancholy in the "image of chance . . . open to ambition" that beckoned Americans.

the midst of calm and easy circumstances." He found the materialism in the American dream to be overly burdensome. He dryly remarks that "Religious insanity is very common in the United States."

"The business of America is business," said Calvin Coolidge. It might have been Tocqueville. "The passions that agitate the Americans most deeply," he wrote, "are not their political, but their commercial passions." The desire for physical gratifications, he noted, drove Americans from agriculture into industry in the pursuit of quicker returns. In the process a second drive developed: "love of the constant excitement occasioned by that pursuit."

Tocqueville also warned of a growing "manufacturing aristocracy." He thought it "one of the harshest that ever existed in the world; but at the same time it is one of the most confined and least dangerous. Nevertheless," he adds, "the friends of democracy should keep their eyes anxiously fixed in this direction; for if ever a permanent inequality of conditions and aristocracy again penetrates into the world, it may be predicted that this is the gate by which it will enter." He further warned of a large army and a protracted war, as a source of danger for a democracy.

Tocqueville perceived the atomization of American life, the loneliness and isolation in the midst of the American crowd and at the same time the compensatory urge to club together and form associations which are part of the democratic structure.

And if, in Tocqueville's America, "the independence of woman is irrecoverably lost in the bonds of matrimony," she surrenders it "without a struggle and without a murmur when the time comes for making the sacrifice." (Susan B. Anthony was not yet a teen-ager at the time of his visit.)

Hogarth interprets Tocqueville's religious hope "to know, to love . . ." (above).

One returns to Tocqueville with some malaise. How would today's American democracy measure up to his? How have the hopes and fears he expressed fared 140 years later? There is some relief, comfort and reassurance (at least in one American's rereading) along with remembered delights. One finds greater grounds for optimism than for despair, as many insights into tomorrow's America as into yesterday's and today's.

The cure for the problems of democracy, said Whitman, and it might have been Tocqueville, is more democracy, not less. The young Frenchman who analyzed a pre-industrial America has a great deal to say to a rapidly approaching post-industrial America, whose problem is no longer production, but rather the producer—the reorganization of society for an improved quality of life through the direct exercise and practice of the democracy Tocqueville describes and advocates. The decentralization he admired is at the top of the agenda of today's futurologists.

Tocqueville's America is not Paradise Lost. It was never paradise and it is not lost. ". . . From this extreme limit of my task," he wrote in concluding his great work, "[I find myself] full of apprehensions and of hopes. I perceive mighty dangers which it is possible to ward off, mighty evils which may be avoided or alleviated; and I cling with a firmer hold to the belief that for democratic nations to be virtuous and prosperous, they require but to will it. . . . It is true that around every man a fatal circle is traced beyond which he cannot pass; but within the wide verge of that circle he is powerful and free; as it is with man, so with communities."

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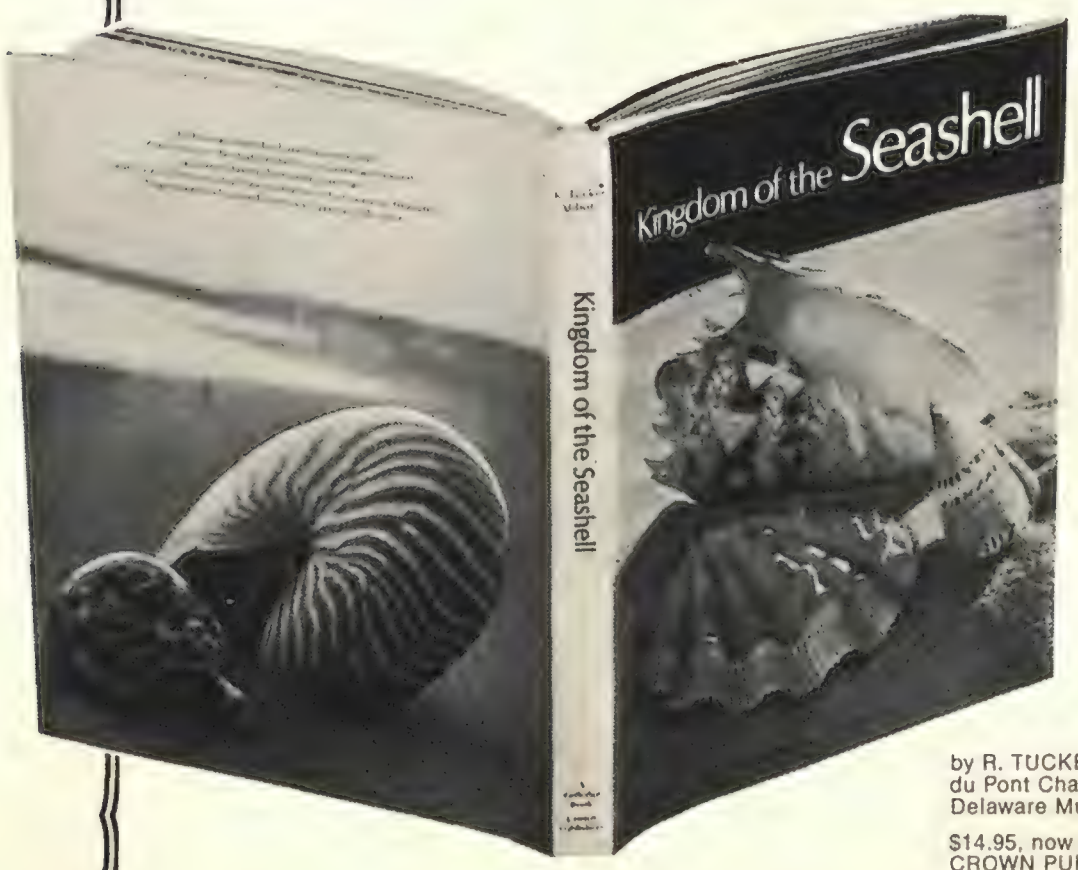

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Tocqueville warned of a growing "manufacturing aristocracy," for "if ever a permanent inequality of conditions . . . again penetrates . . . this is the gate by which it will enter."

For the first time in eight years, The National Commemorative Society is offering American collectors a limited number of NCS memberships.

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First of all, a membership in good standing entitles its owner to nominate and vote on all subjects to be commemorated by NCS. Each month NCS members select, by mail ballot, a subject of national historical significance to be commemorated eight months hence. A noted sculptor is then commissioned to execute a commemorative coin-medal on this subject. The greatest medallic artists of our time—Roberts, Vincze, Gasparro, Jones, Weinman, Manca, Grove and Schlag among them—are included on the distinguished roster of NCS sculptors. Each NCS commemorative is thus a true work of art—a numismatic masterpiece worth collecting and displaying for its artistic quality as well as its historic significance.

Second, a membership in good standing entitles the owner to purchase—at the guaranteed issue price of just $7.25—the one sterling silver proof of each NCS commemorative which is minted expressly for his membership. These proofs are struck at The Franklin Mint with a two-tone "true proof" finish in solid sterling silver. Each proof is hallmarked and serially numbered on its edge with the membership number of the member for whom it was struck. And, after every member has received his or her proof of the current issue, the dies are destroyed and a notarized statement is filed to that effect. There are never any extra pieces struck for public sale.

Third, along with his monthly sterling silver proof, each

member receives (1) a deluxe octagonal Lucite coin holder, (2) an etched nameplate identifying the current issue and its sculptor, and (3) a monthly NCS Newsletter . . . all at no extra charge. The monthly Newsletter provides NCS members with an effective forum for their views on the operation of the program and the selection of subjects. The members are free to speak up, to criticize, to commend, to suggest—and they use these privileges liberally. The Newsletter also contains a portrait and biography of the sculptor of the month, plus historical reference data on the subject being commemorated. Binders to hold the Newsletters are sent to NCS members with every 10th Newsletter, at no extra charge.

A handsome membership certificate and membership card are also supplied to each member without charge.

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The Deluxe Collector's Chest (pictured below) luxuriously houses 10 NCS issues and comes with a serially numbered brass nameplate identifying the membership number and the issues contained within. The price is $7.50.

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If you would like to become a member of The National Commemorative Society—beginning with the George Washington Commemorative, the first issue in Series III—you must act now.

Since there are only a limited number of NCS memberships available, and these memberships will be assigned on a first-come, first-served basis, we recommend that you mail your application (together with a remittance in the amount of $14.50 for the first and second issues in Series III) to NCS headquarters as soon as possible. In any case, only those applications which arrive postmarked no later than Thanksgiving Day—November 23, 1972—will be considered at this time.

REPRESENTATIVE NCS ISSUES

STATUE OF LIBERTY
Sculptured by Edward R. Grove

THREE ASTRONAUTS
Sculptured by Gilroy Roberts

ROBERT E. PEARY
Sculptured by James Berry ACTUAL SIZE

NCS Deluxe Collector's Chest

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Please enroll me as a member of The National Commemorative Society. Enclosed is my remittance in the amount of $14.50* for the first and second issues in Series III (the George Washington and J. Edgar Hoover Memorial Commemoratives).

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IMPORTANT NOTE: In the event that the membership rolls are filled when your application is received, your name will be placed on the Waiting List and your remittance will be returned to you.

31-86

Having climbed aboard a live oyster in a seawater tank at a Woods Hole laboratory, a phalanx of three oyster borers begins to drill small but ultimately lethal holes through the oyster's shell.

By Susan Schlee

The prosecution of the oyster shell burglaries case

After decades of investigation, the modus operandi of the oyster's archenemy, a common rock snail, has been discovered

Second only to man in its love of oysters, and in its ability to find and feast upon these delicious bivalves, is the carnivorous snail *Urosalpinx cinerea,* the common oyster drill or borer. No one knows how many more oysters there would be for our table if the drill did not bore into and kill countless thousands of shellfish each year, but the fact is that oyster production in the United States has fallen from 150 million pounds in 1908 to less than 55 million pounds in 1971, and in most oystermen's opinion the drill is *at least* as responsible as pollution, starfish, or any other enemy for the oyster's precipitous decline.

The effects of this decline were already being lamented in the late 1800s when zoologists and natural historians set out to control the oyster drill. Their first job was to learn everything possible about this ubiquitous rock snail, especially its feeding habits.

Among the most diligent of the 19th-century naturalists was the Reverend Samuel Lockwood who, having witnessed the creature "in the burglarious act," gave "the following as my view of the case: With its fleshy disk, called the foot, [the snail] secures . . . a firm hold on the upper part of the oyster's shell. The dental ribbon [a horny band called a radula set with rows of sharp teeth] . . . is brought to bear directly on the desired spot. At this point the teeth are . . . made to rotate one circle, or nearly so, when the rotation is reversed; and so the movements are alternated, until, after long and patient labor, a perforation is accomplished. . . . The hole finished, the little burglar inserts its siphon or sucking-tube, and thus feeds upon the occupant of the house into which it has effected a forced entrance."

In spite of the observations of the drill's behavior and subsequent recommendations made for its control, such as cleaning the oyster beds with a fine-meshed dredge or employing small boys to search for its egg cases among the weedy rocks at low tide, the voracious drill multiplied rapidly. By the turn of the century it had inadvertently been transplanted with thousands of shipments of oysters not only up and down the East Coast and to the West Coast of the United States, but to the waters around Great Britain as well.

In the 1920s there was a particularly terrible destruction of oysters. The damage in the New Jersey area alone was estimated at more than $1 million annually, and in England many oyster beds were nearly wiped out. The drill was blamed for much of the loss and fishery services on both sides of the Atlantic quickly called for studies that would lead to some effective means of control.

Urosalpinx cinerea, "the master and most destructive, as well as the most abundant of them all," was observed to feed continuously for hour after hour, literally burying itself in the oyster's flesh, but little that was new or helpful was learned.

Then, in 1940, a young graduate student from the University of Wisconsin, Melbourne R. Carriker, became interested in *Urosalpinx cinerea.* Working with Dr. Thurlow Nelson from Rutgers University, Car-

Dr. Melbourne Carriker watches borers complete holes, drilling from beneath the half-shells.

Color photographs by Fritz Goro

Borer's technique close up: Proboscis extended in the hole (lower right), the borer rasps at loosened material with toothy radula (invisible here). Above, it explores borehole

riker collected *Urosalpinx* from the rich tidal bays north of Atlantic City. After cracking open their thick, spiraled shells with a hammer, he carefully dissected them and mapped the contents of the snail's remarkable proboscis. He found that in a full-grown snail, about an inch and a half in length, the long, tubelike proboscis could be fully extended to a length slightly greater than the snail's own dimension. In this retractable tube was the snail's complex drilling and feeding mechanism. Immediately inside the translucent proboscis lay the pinkish-red, well-muscled buccal mass which enclosed the snail's mouth and "a fleshy tonguelike proturberance" called the odontophore. This in turn supported the tooth-studded radula (see page 81). Like a telescoping tube within a telescoping tube, the odontophore and radula could slide to the end of the proboscis when the snail wished to drill or feed.

Carriker saw that as *Urosalpinx* began to bore, the radula was not used as a drill but instead made vigorous licking motions which drew the sharply pointed teeth across the oyster's shell. Not only did the tonguelike odontophore move, but the radula itself, stretched like a prickly ribbon over the end of the odontophore, slid back and forth in time to the rasping stroke. The radular teeth at the end of the odontophore bore the brunt of each stroke but since the beltlike radula was continually growing at one end and being destroyed at the other, new teeth were slowly coming forward and there was therefore no danger that the borer would be incapacitated by a lack of sharp, calcareous teeth.

After a short period of rasping, the snail withdrew its proboscis, apparently moved forward slightly, and sat with the front part of its foot pressed firmly on the boring site for nearly an hour. Then out came the proboscis and radula and the process was begun all over again. Carriker had not been led to expect the quiet sitting portion of this cycle, but from his dissections he had found, on the part of the snail's foot that was applied so diligently to the drill site, a small pore, "easily overlooked," within which was a small, pincushion-shaped gland.

This came to be known as the "Accessory Boring Organ" or ABO, and after watching many snails at work, Carriker concluded that the ABO "secretes a substance which weakens the shell so that removal of the shell by the radula is facilitated." Most zoologists disagreed, still crediting the radula with doing all the work. Military service and academic work postponed Carriker's research on oyster drills for more than ten years. Then in the mid-Fifties Carriker joined the teaching staff at the University of North Carolina at Chapel Hill and again approached the question of how *Urosalpinx* bores through shell.

During his first summer of research at the University's Institute of Fisheries Research, one of the snails he was observing got its proboscis caught and, after tugging for some time to free itself, gave a yank which tore the proboscis in two and left half of it behind. Within three weeks the borer not only had recovered, but had regenerated a small but complete radula and proboscis and was again boring through oysters.

This accident gave Carriker the idea of studying the role of the radula and ABO in the drilling process by

Susan Schlee lives near Woods Hole and has written Edge of an Unfamiliar World, *a history of oceanography to be published in January.*

with its foot. Next, borer lowers ABO into hole where a glandular secretion dissolves more of the shell. Sequence will be repeated until borer breaks through shell.

amputating one or the other of these organs from a large number of snails and seeing how the loss affected their ability to bore.

Sixty-four snails were operated upon, their proboscises cleanly snipped off. All recovered. Some snails regrew minute but complete radulae and proboscises in a little more than a week. All the snails were boring normally in 11 to 34 days but *none* had begun to bore until it had regenerated a complete proboscis, which suggested that the ABO alone was insufficient. The holes bored by the recovered snails with their undersized proboscises were of a normal size and shape, indicating that while the ABO was not capable of boring without the proboscis it *was* responsible for the dimensions of the hole.

At the same time Carriker amputated the ABOs from 72 other snails. All of these snails recovered, and within 10 to 20 days "the ABO in most snails had reached nearly full size, or full size. . . ." Again Carriker noted that although these snails crawled onto the oysters provided for them, they did not begin to bore until the ABO was fully regenerated. There was one exception which literally (if rather pathetically) proved the rule that the ABO as well as the radula is necessary for boring. Two months after the operation, a single snail still had not begun to bore effectively, but Carriker had seen this female "rasping with her radula on the shell of live oysters on some 13 different occasions, as if attempting to penetrate. The rasped spots were clean, but there was no discernible borehole. We sacrificed the snail and . . . found no trace of an ABO."

These experiments amply demonstrated that both the radula and ABO are needed for boring, but the data could not be used to substantiate Carriker's still controversial belief that the hole was excavated primarily through chemical means with only a minor amount of mechanical help from the radula.

In 1962 Carriker was appointed director of the Systematics-Ecology Program at the Marine Biological Laboratory at Woods Hole, Massachusetts, and there began a concentrated study of the elusive chemical function of the Accessory Boring Organ. With his conviction of the ABO's importance came an additional reason for studying the snail. Not only could a knowledge of the borer's behavior be used to help control its destruction of oyster beds, but also, assuming as Carriker did that *Urosalpinx* secretes a substance from its ABO that dissolves the calcium carbonate of the oyster's shell, an understanding of its method of excavation could provide a handy model for studying the little-known process of the chemical dissolution of calcareous materials. Although the process was poorly understood, Carriker knew that it was widely used by both plants and animals. Barnacles, sponges and worms—even fungi and algae—all excavate shallow homes in shell, calcareous rock and coral. The bacteria associated with tooth decay excavate innumerable cavities in the calcium phosphate of our teeth.

The National Institute of Dental Research was sufficiently interested in the drill's method of boring to support the program of snail research, and within a few years Carriker had pieced together the major portion of the borer's activities.

During the cold winter months, he had learned, *Urosalpinx* hibernates in shallow, temporary burrows in the sea floor, but in spring when the water warms to about 50 degrees F, snails by the thousands work their way out of the sandy mud and begin to creep

over the bottom in a series of irregular spirals in search of food. Carriker found that when a hungry borer detects the dilute excretions of an oyster, mussel, barnacle or, in dire circumstances, even of another oyster borer, the snail's path becomes less devious as it begins to track down its immobile prey.

Advancing at a rate of a foot or less per hour, the snail eventually reaches the oyster and, avoiding the edges of its snapping valves, crawls upon its back.

Then the borer, like a blind man, slowly examines the oyster with a softly undulating proboscis tip and, after a time, decides upon a suitable boring site, which may be anywhere on the exposed portion of the shell except where the two halves of the oyster meet. Extending its proboscis, the snail first rasps away any incrustations or soft, scaly material that may be adhering to the site. Then it applies its ABO to the clean oyster shell.

After sitting motionless for 30 to 40 minutes (the time varies from snail to snail) the borer withdraws its ABO, extends its proboscis and, everting its radula, begins to scrape off flakes of chemically weakened shelly material which it swallows. After rasping—a procedure which lets seawater flow into the borehole—the snail withdraws its proboscis and sweeps a part of its foot over and into the hole, thus pressing out the seawater. The ABO slides smoothly into position after it, and so tightly is the foot clamped against the oyster that a watertight seal is effected which prevents the secretion from the ABO's glistening disk from becoming diluted. The cycle of rasping, sweeping and sitting is repeated again and again with a vigor that increases as the water warms. Under normal circumstances, in the summer, for example, a borer typically penetrates the shell of an adult oyster in four to six days' time.

But the circumstances under which Carriker had viewed the drills were not normal. For purposes of

An oyster sandwich: Two borers with proboscises extended through artificial boreholes feed on

a shucked oyster that is mounted in a collar of shell and placed between two pieces of glass.

observation he had constructed mock oysters, using live, shucked oysters placed within collars of shell and sandwiched between two plates of glass. This allowed him to watch the borer work, but also suffocated the oysters. After two or more days, evidence of their decomposition seeped through to *Urosalpinx* and the snails, understandably repelled, responded by dropping off before their holes were completed. Consequently, it was impossible to tell whether the rhythm of rasping and secretion continued unchanged throughout the entire excavation of the holes.

To answer this question, Carriker made use of a special contact microhydrophone which amplified the borer's rasping sounds some 1,500 times. Continuous recordings were made as borers worked through the shells of small oysters, and these tapes demonstrated that throughout the process each rasping period lasted about a minute and was followed by a much longer period (30 to 40 minutes) of chemical activity.

An oyster's view of the borehole

In the fall of 1967, Carriker began a series of experiments to determine how drills identify live prey and so avoid drilling through empty shells. As a part of this experiment, he let a tankful of snails settle on live, normally functioning oysters; but once they had been drilling for a day or so, he curtailed the oysters' normal clapping movements by clamping them shut with rubber bands. He expected that the snails, no longer feeling the oysters move beneath them, would soon crawl off. But they did not. Having got a good start, the drills single-mindedly continued to bore all the way through the shells.

Curious, thought Carriker.

Suddenly he realized that here was a way to observe the snails directly during the final phase of boring. That afternoon another batch of borers was allowed to start drilling on a crop of healthy oysters and a few days later, when Carriker estimated that the boreholes were nearly complete, he and his assistant, Dirk Van Zandt, proceeded to shuck the oysters right out from under the snails.

"Each half-shell with its boring snail . . . was then placed, inner surface up with the snail suspended underneath, on a support cut from a plastic dish. . . ." Each contraption was returned to a tray of running seawater and "a binocular microscope was positioned over the tray to facilitate viewing of the final stages of penetration of the shell."

As Carriker and Van Zandt kept watch over the empty, upturned oyster shells, they began to notice that it was possible to look right through a thin section of transparent shell into the most nearly completed boreholes.

Finally, tiny holes began to appear on the inside of the oyster shells and while some snails vigorously attacked the edges of these pinholes with their radulas, breaking off bits of shell and passing them down their nearly transparent throats, other snails kept on drilling and secreting in the normal way until the holes were large enough to admit their inquiring proboscises. Normally, a borer would then encounter the oyster's flesh and with its radula shred off bits of meat and carry them into its throat and stomach.

Carriker was pleased with his new method of observing snails and began at once to exploit the possibilities of the single-valve model as he called his new contraption. In one experiment, he inserted a minute pH electrode directly into the borehole once a small opening had been drilled by the snail. As the ABO slid into the borehole it was pressed directly against this electrode, which continuously recorded the acidity-alkalinity of the ABO's secretion. To everyone's surprise the secretion was definitely acid, roughly comparable to the acidity of strong vinegar.

It became, of course, a question of great interest to identify the secretion, but to analyze the substance directly required much more of the glimmering slime than was then available. Carriker worked for a year to devise a method of drawing minute amounts of the secretion into hair-thin capillary tubes but with little success. At the same time he approached the problem indirectly and tried to determine the nature of the secretion by studying its action on a wide variety of substances, another delicate task.

He took polished test squares of many materials and placed them directly against boreholes as the snails bored through. After the squares of shell, bone or natural mineral had been left in place for 24 hours, each was rinsed and dried very quickly and coated with the finest film of gold in a vacuum chamber. The surfaces of the squares were then examined with a scanning electron microscope.

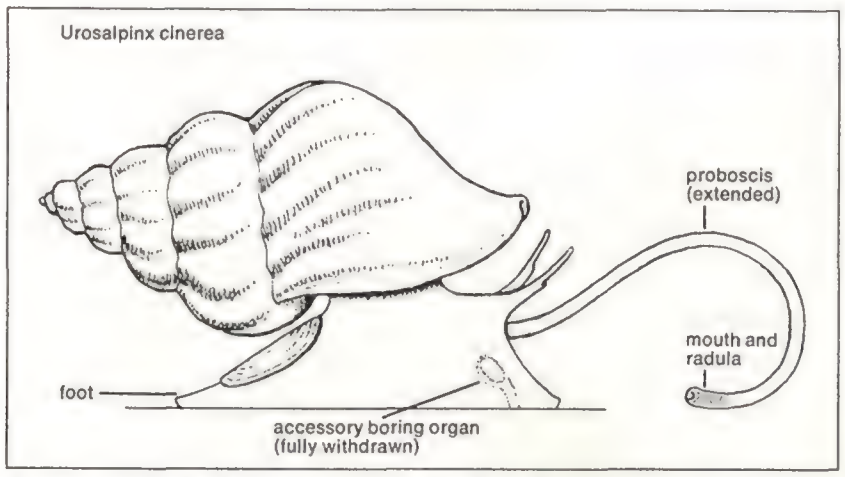
Working with Dr. Virginia Peters at the Woods Hole Oceanographic Institution, Carriker found incontrovertible proof of the ABO's ability to eat into a variety of materials. Among other findings, he further discovered that the vulnerability of the crystals to the still unknown secretion depends in part on their alignment—that is whether the groups of crystals lie at right angles to the hole or are standing on end.

"There are two major questions still to be answered before the drilling process of *Urosalpinx cinerea* can be considered to be fully understood," Carriker said recently. "One of these has to do with the effects of the secretion. Why does it cause an oyster's shell to dissolve in such curious patterns? And what can this teach us about dental caries and their prevention?"

The second, which is even more fundamental, is the need to learn more about the secretion itself. What is it? How is it manufactured? And how is it released?

"If we can answer these questions," he continued, "the study of how *Urosalpinx* bores through shell will have been substantially completed. Then it will be time to examine other species of boring snails, to make comparative studies of their different methods of boring and to trace the evolution of their complicated shell-penetrating behavior. Also, the stage is now set for practical or applied studies. Although no efficient method of controlling the borer has yet evolved from our studies, we have discovered at least one chemical which when added to seawater will inhibit boring. This may lead to the discovery of substances resistant to the ABO secretion, which then might be used to make a protective coating for oyster shells.

"At present, I must concentrate on completing the *Urosalpinx* study. But later," he added with a smile, "why, there will be hundreds of related questions to answer, more than can fill a lifetime."



Anatomy of a borer, above. In tip of proboscis is toothy radula (shown at right, magnified 700 times by scanning electron microscope) with which borer rasps shell parts dissolved by Accessory Boring Organ.

Wagon wheels frame a half-dugout, typical home
on treeless plains far from the East's gilded mansions.

Photographs by A. Y. Owen

By Elizabeth Fagg Olds

Cowboy ghosts feel at home at Texas museum

Historians and preservationists saddle up to safeguard the drama of ranching from roving bands of television writers

Every evening young TV fans gape at cowboys—washed, barbered and possibly corseted—as they spur horses to merciless gallops, mow down multitudes of Indians and shatter saloon mirrors in incredible barroom brawls. While all this energy is spent satisfying our national nostalgia for the cowboy era, true stories of roundups and branding, of drives along the Chisholm Trail, fade slowly into the sunset.

Few people can actually grasp the sweaty day-to-day grind of working cattle in herds that numbered tens of thousands, over territory that sprawled for hundreds of miles, through ferocious changes of weather and despite wolves, thieves, Texas fever, heel flies and ticks. All this with no control other than a handful of agile men astride wiry little cow ponies and few aids other than an occasional windmill, some strands of barbed wire and the products of Winchester and Colt.

Now, at last, a scholarly project on the campus of Texas Tech University in Lubbock has dedicated itself to salvaging ranching history. The Ranch Headquarters is being developed as an outdoor living museum on a 12-acre site adjacent to the University's stunning new $2.5 million museum.

The idea, envisioned by Texas Tech University's president, Grover E. Murray, was implemented by a retired Tech museum director and history professor, Dr. W. C. Holden, and his historian wife Frances, assisted by a committee of working ranchers. They scoured the Southwest for early structures which could be moved and preserved. Most of the earliest buildings

had disappeared and others had been cannibalized for precious lumber or had been bulldozed. Some had gone up in flames. Yet there remained, although often in various stages of decay, sufficient usable structures to tell a story.

A Ranch Headquarters Association, organized in 1969, has assembled an initial $225,000. A flyer, mailed to a selected list of Southwesterners, listed the items needed: an old bunkhouse with furnishings; a barn with buggy, buckboard, surrey and chuck wagon; a saddle and harness room; a chuck house; an outhouse; corrals and loading chutes; early types of barbed wire; publications and periodicals (including mail-order catalogs); photographs of ranching people and activities, including pictures of foreign owners of ranches and any of the objects they brought with them from abroad (British capital once poured into Texas).

In October 1970 the Tech Headquarters site was dedicated with three relocated buildings in place. Now there are 11. The master plan calls for assembling some 20 structures which will tell the history of ranching beginning with the Spanish era of the 1700s. The buildings will be presented as if they might be one huge historic working ranch headquarters.

You enter across a cattle guard and through the ranch gate, and step abruptly from the rushing traffic of Lubbock into a world of wide horizons and open grass. Telephone poles, TV antennas and high-rise university buildings have been cleverly screened by grass-covered hills. These also isolate buildings of unlike origin or period so that you won't see a log cabin from a forested region hard by a dugout of the open plains. Instantly the atmosphere somehow bespeaks burning mesquite, the dry screech of a windmill, the bawling of cattle.

Long-horned cattle were brought from the Spanish province of Andalusia to stock the haciendas of the conquistadores. Cortés himself kept cattle. Coronado, in 1541, assembled more than 500 head for his trek to discover the "Seven Cities of Cibola." The Spanish cow was a rangy, long-horned, long-legged beast, famous for its vicious, restless nature, but highly valued for its resistance to the plagues of the Southwest.

The Spanish ranch buildings left in southern Texas today are blockhouse style, about 24 by 42 feet, with two rooms, made of rectangular caliche blocks about two-and-a-half-feet long and weighing some 400 pounds each. These flat-roofed houses were designed using the Spanish vara. Most blockhouses have rifle ports and served as both ranch headquarters and forts. Such a building starts your Headquarters tour.

After the Spaniard had advanced northward from central Mexico, Anglo-American settlers from the Atlantic seaboard moved westward during the early 1800s into eastern Texas. With them came milk cattle from Northern Europe—Durhams, Herefords, Guernseys, Jerseys. Their blood now mingled with that of the "wild" Spanish cattle to produce the famous Texas longhorns. Thus the cradle of the cattle industry was

A native Texan, Mrs. Olds has been a foreign correspondent, a bureau chief in Mexico for Time *and* Life *and a reporter for* Reader's Digest.

U Lazy S Carriage House held buggies and harness. A cache under floor was for forbidden whiskey.

near some old and lovely towns—Victoria, Goliad, Cuero and Gonzales—in the southeastern corner of south Texas, where Spanish and Anglo-American cattle met and mixed. Anglo-American herds were substantially increased when Texas gained independence in 1836. Retreating Mexicans abandoned their cattle and the victors branded them into their own herds.

From this birthplace comes a beautiful little cabin of hewn logs, not too different in appearance from an early eastern log cabin. It is typical of ranch dwellings of this earliest period of the Texas frontier. It was built in the 1830s by the resident overseer for a European cattleman who had acquired "six leagues" (about 27,000 acres) on the Guadalupe River.

After the Texas Revolution, cattlemen pushed north and west into the Edwards Plateau (LBJ country). From this time and place comes a double log cabin with stone fireplaces, two wings connected by a "dog-run" or covered passageway, further sophisticated by stone shed rooms in back and a porch in front. It was built by a rancher in the mid-1850s, used for a post office and stagestand until the new owner was murdered by bushwhackers, and in one fashion or another was in use until the 1930s.

During the Civil War ranching thrust still farther north to the Cross Timbers, a belt of low forest that stretches from south to north, cutting Texas in two. Although not an ideal range, cowmen had nowhere else to expand. Eastward, no open range remained in the Texas blackland farming country. Westward, Comanche and Kiowa were fighting for survival.

From this era comes the Jowell House, a fortress of smooth quarried stone. It was built by George R. Jowell after he returned from a Kansas trail drive in 1873 to find his ranch cabin in the Cross Timbers burned to the ground by Indians. Luckily, his wife had saddled a horse and escaped with their child. Two-storied, only 14 by 18 feet, Jowell's new house was grimly ready with rifle ports for Indians.

The tribes drifted with the buffalo over an area twice the size of New England, a tableland called the Llano Estacado (Staked Plains) which stretches north into the Texas Panhandle and becomes part of the Great Plains. The next expansion of the cattle industry opened these seemingly endless grasslands in the late 1870s. The first railroad had yet to cross the plains, and supplies, including lumber, were hauled by wagon hundreds of miles. Settlers used what was at hand for shelter—mainly the earth and a few cottonwood logs dragged from distant river bottoms. With these they fashioned dugouts and sod huts.

Dugouts said to be comfortable

At the Ranch Headquarters you turn a corner and emerge—thanks to the magic of sheltering berms—on the Staked Plains where you can see "from hell to breakfast"—the full sweep of 12 available acres. Here are displayed two dugouts. I know people who remember living in such shelters and they claim they were comfortable—cool in summer and warm in winter. Looking at these two, I am ready to concede that they may have been more comfortable than total exposure—and I suppose there was something snug about hiding from that immense sky and those boundless distances on land so flat you can almost see it curve.

To make your basic dugout you dig back into the steepest bank around—and on that tableland you'll find nothing very precipitous—chip dirt steps down into the hole, cover the top with logs and sod and hang the hide of a cow or buffalo across the opening for a door. While digging his home, the rancher often hung a tarp from the side of his wagon for temporary shelter.

A slightly more spacious home is the half-dugout which has log walls faced with sod and brush—and hence more headroom. Sometimes stone was used in these low walls as in the ranch bunkhouse at Headquarters. It was built as a homestead, then acquired by the far-flung and famous Matador Land and Cattle Company and maintained as a bunkhouse and kitchen until the 1950s.

Still fancier is a two-story dugout from the C.C. Slaughter ranch west of Levelland. Originally a simple 10-by-14-foot dugout, it was augmented by a wooden upper story. Clyde Fitzgerald, longtime cowhand for Colonel Slaughter, used this dugout in 1912. He recalls that the stove "was riddled with bullet holes . . . from target practice. . . . Our table had only two legs, one end resting on the dirt ledge. It served for both cooking and dining. Upstairs was a one-armed rocker, a bacon crate to keep our clothes in and a wooden bedstead with thin slats and a cowhide-spread which in hot weather rivaled the smell of a cowpoke who'd gone a long time without a bath."

Cattle swarmed over the open ranges of west Texas, and then were driven northward to reach the railroads and thus the northern markets where beefs brought $30 to $40 a head. Trailing was not new, but had never approached this. Streams of hundreds of thousands flowed over the Chisholm Trail, the Dodge Trail, the Goodnight Trail, the Pecos Trail and others. The yearly traffic of some 200 herds of about 2,500 head each caused "towns, customs and a distinct type of people to grow up beside the trails," as a historian said.

The usual herd required about 12 men with at least six saddle horses for each, a wrangler to care for the horses and a chuck wagon. To prevent overeating, the herd was strung out. Cowhands knew how to tame and trail-break a bunch of wild longhorns, soothe them by singing, and control stampedes by hard riding that encouraged the herd to turn in a loose circle.

Before trailing ended, because of hostility from Missouri and Kansas farmers, possibly ten million cattle had trudged up the various trails. The drives continued until at least 1890—well after Texas railroads were available; trailing was cheaper than rail transportation and cattle often arrived in better condition, having fed themselves on native grass and watered in the streams en route. Although the peak period of trailing lasted only 15 years, the vision of herds on the move, with a ten-gallon hat somewhere in the dusty midst, remains the symbol of American cattle ranching.

Even after the Texas & Pacific Railroad pushed as far west as Colorado City, Texas, lumber was still a long haul away from the plains—now almost 200 miles by freight wagon. Although available, sawed lumber still had to be stretched to the utmost. Now appeared what I always think of as being the typical west Texas small ranch house: a frame house of box-and-strip construction with two main rooms, two shed rooms in back, several windows and a narrow porch in front. (Box-and-strip construction means making a box of boards nailed to a frame without studs, like a packing box, with strips nailed over the cracks.) Such a house, 24 by 28 feet, is at Headquarters. From it, a half million acres of land was once operated for Colonel Slaughter's Long S Ranch.

In my childhood these little houses still dotted the plains, separated by vast distances. You could spot them from afar, like ships at sea, by the inevitable

Warren Brumley, a Texas Tech student, gathers a bundle of sotol to use on the sotol-and-picket house.

clump of planted trees and the windmill. In such a house I spent my first night on a ranch. It sat close to the ground on cedar posts, the paint barely covering the boards. This was on a sheep ranch, belonging to a young man whose cattleman father had disowned him for having taken up with mutton instead of beef and for marrying a city-bred socialite wife. The house, like the one at Headquarters, probably dated from around 1895. It had a cistern which filled from eaves troughs conveying rainwater off the roof. My impression of cistern water was of a disturbing shade of yellow brown—clear, except after a rain when the debris had not yet settled. It was sweet and slightly metallic to the taste. Not bad.

The pressure of nesters—dirt farmers—and the adoption of barbed wire (SMITHSONIAN, March 1972) put an end to the open range and altered the whole structure of ranching. Hitherto a mobile affair, the ranch became a centralized operation with permanent, substantial buildings. A new occupation was created: the fence rider. The job was despised, but required a trustworthy man whose sole duty was to inspect and repair. Living at line camps, he saddled up each day and jogged off along the line of fence. For lunch he carried a can of tomatoes, opening it with a pocketknife, eating with an old spoon from his saddlebag. For diversion he chain-smoked, rolling his own and lighting up in a 40-mile wind with a single precious match.

Gambling was against ranch rules

Headquarters has an unusually substantial bunkhouse of unmortared yellow limestone from the Masterson JY Ranch, built around the 1880s. Such "dormitories" were the only homes many ranch hands ever knew. Yet many had families, and a married man was considered desirable—despite the movie cowboy, who is always blessedly available for romance. Hands were required to obey strict ranch rules, often posted on bunkhouse walls. Typically the rules forbade stealing, carrying six-shooters, card playing and gambling, running mustangs and antelope with ranch horses, abusing horses, mules or cattle, and the use of liquor.

Surprisingly, only a few hands were actually engaged in handling cattle—that is, rounding up and branding. The half-million-acre Spur Ranch, for example, paid wages in 1891 for 17 different job classifications. These included fence-riding, trail riding (preventing herds from other ranges from trailing across Spur pastures), farm work, horse wrangling, cooking, "reping" at outside roundups (representing the Spur brand in recovering cattle that had strayed into other herds), hauling hay, blacksmithing, tanking, dairying, range-riding. Ho-hum work, most of it, and pay was minute—about $30 a month for a hand. The chores varied through

Pot-bellied stove and coffee grinder evoke breakfast at the box-and-strip house of the Long S Ranch.

Dusty boots face out on a Long S outhouse. Col. C. C. (Christopher Columbus) Slaughter owned it.

Brightly painted ranch buggy may have taken owner to supervise activities that could be reached by road.

the seasons, relieving the monotony somewhat. A man might ride bog one season (checking waterholes to pull out mired cattle), rep another, haul wood, drive a plow or still-hunt (ride the range to find mavericks—strays that had escaped branding). But half a century later he could be working at the same job he started with—riding bogs. He had probably saved little and often died without money for his burial.

Excitement came from prairie fires—to which every hand reported instantly—and rustlers. When thieves were prowling, men did go armed. Once when danger stalked the XIT foreman, he never rode the same trail twice, kept his windows painted dark green, sat back beyond the light of the campfire and allowed no stranger to approach without identification.

Typical of another side of ranching—the raising of sheep and goats—is a sotol-and-picket house. Not much more than a hut, it comes from a desert ranch on the Pecos River where the environment provided little with which to build. One room is made of upright posts, or pickets. Two adjoining rooms are made by planting posts upright every three or four feet, then nailing sotol (it resembles yucca) horizontally to each side of the posts, making something that looks like a double wall of fishing poles. The space between is filled with dirt and stone rubble. A thatched roof of sacahuiste stalks protects this architecturally unique structure. Discovered in advanced dilapidation, this frail shelter could have survived only in a dry region.

Ranch structures came to include smithy, granary, carriage house, stable, barn, corrals, a schoolhouse (the larger outfits paid their own teacher), a ranch office and a milk and meat cooler which utilized running water to preserve milk, eggs, butter and clabber. In the meat house area, a latticework affair through which fresh air circulated, sides of beef could be kept indefinitely—right through the hottest weather—before the white man's bacteria arrived.

Your tour of Headquarters will close at an elegant home of later years, showing that those who had surmounted earlier hardships could live in comfort. This two-storied, gabled, turreted, porch-trimmed home from the 1890s will express the rancher's dream of refinement: the big house with rosewood piano, dark-red velvet draperies, and Texas-crafted or European-purchased furniture—a strange blend of late Victorian and the local craftsman's whim. Even amid such handsome furnishings, certain old frontiersmen could never sleep well in a bed; they'd lie on the floor in their bedrolls, as they'd slept for 40 years.

Windmills rise above a weather-beaten chuck wagon, inevitable landmarks of the cattle country.

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The chess set given to the USSR by the USA

A courtlady gazes from her cramped quarters in a windowed rook. The queen holds a falcon on one wrist and smiles euphorically. Clutching a crosier, the bishop looks as if he's about to slip drowsily off his stool. The king winds a majestic leg over his staff. These are just some of the characters in a porcelain chess set that President Nixon presented last May to the Russian people. The gift, produced by Cybis in Trenton, New Jersey, ironically preceded Bobby Fischer's defeat of Russia's world champion, Boris Spassky. The set is intended for show rather than play. Over the years in chess, Christians have fought barbarians, Indians have checkmated cowboys and capitalists have confronted communists. It was a wise diplomatic move to choose the traditional medieval court, which can hardly offend anyone.

'Move, damn clouds!' shouted the eclipse-freak

A small patch of sky showed in the midst of the cloud cover that developed over Trenton, Nova Scotia, last July 10. It was getting darker and the small group of photographers, including self-proclaimed eclipse-freak Doug Plummer from Chambersburg, Pennsylvania, hunched over their tripods praying the patch of sky would reach the sun in time—or the sun would reach the patch—or however it works when you've got two minutes of totality and time has slowed to a standstill but everything's happening too fast and which shutter button do you push first . . . and there it is . . . and there it goes . . .

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Alice Paul, beside a bust of Susan B. Anthony,
is, at 87, still actively involved in women's rights.

By Lynne Cheney

How Alice Paul became the most militant feminist of them all

She marched through a gauntlet of derision
and helped win the vote for women.
Now she still fights on for equal rights

Mabel Vernon was there, lecturing the younger women who gathered around her, using the same rhetorical techniques to educate them that she once used on anti-suffrage crowds. Hazel Hunkins Hallinan was there, looking remarkably young at 82. Yes, she confessed, she had once scaled the White House fence and set protest fires among President Wilson's trees.

A tea in Washington, D.C., had brought the onetime suffragists together, a late afternoon tea at the Alva Belmont House, the historic headquarters of the National Woman's Party. Feminists of all ages and persuasions crowded into the headquarters, which, with its antiques and statues and paintings, is a kind of shrine to the first stages of the women's movement.

One feminist, perhaps the Woman's Party's most important member, was absent. Alice Paul, the most militant of the suffragists, the woman who more than anyone created and shaped the Woman's Party, had told me earlier that she wouldn't be coming.

Appearing at tea parties has never really been Alice Paul's style. For the more than 60 years that she has been in the women's movement, Miss Paul has been organizing, planning, usually moving behind the scenes, leaving the limelight and frivolity to others. She was not at all anxious to have me write about her. "Write about the National Woman's Party," she commanded brusquely. Only after I expressed interest in working for ratification of the equal rights amendment did she agree to talk to me at any length. "I thought it was just for an article," she said. "If you can help, maybe we can make some sort of arrangement."

Having invested her lifetime in securing equality for women, and with the passage of the 19th Amendment to her credit, Alice Paul is still at work on the proposed 27th—the one that makes discrimination based on sex unconstitutional. Approved by Congress, the amendment becomes law on the affirmative decision of three-fourths of the state legislatures. In September, Pennsylvania became the 21st state to ratify.

I soon found that the "arrangement" Miss Paul mentioned did not include much talk about the past. She would rather discuss getting the equal rights amendment ratified in Wyoming than recall the suffrage struggle. And conversations with Alice Paul go where she wants them to. "Why in the world would anyone want to know about that in 1972?" she responded to one historical question. And to another: "You know the answer to that as well as I do, or else you haven't read *any* of the books."

At 87, Alice Paul is tiny and her hair has turned gray, but she is not a sweet little gray-haired lady. And though old pictures show her as a fragile, delicately pretty girl, she seldom played the role. Her dictatorial ways are as legendary as her stubborn persistence.

Yet along with bruising egos, she arouses great admiration. The intensity of her lifelong dedication to equal rights for women is awe-inspiring. One woman who knew her during the suffrage campaign believed that Alice Paul had made a vow not to think about anything except suffrage until the federal amendment had been achieved. And then, after almost 50 years more of fighting for an equal rights amendment, Miss Paul told me, "I never wanted to do anything but this." And so, if Alice Paul is "plain-spoken to the

Free-lancer Lynne Cheney teaches "Women in Literature" at George Washington University.

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point of rudeness," as William L. O'Neill says in his book, *Everyone Was Brave,* it's because she has no time for anything unless it will advance the cause of women's rights—and that includes tact.

Yet Alice Paul, during the suffrage campaign, had an uncanny ability to draw people to her, to get them to respond the way she wanted. In January 1913, the 28-year-old Quaker-born PhD took over chairmanship of the National American Woman Suffrage Association's Congressional Committee, which was practically defunct. NAWSA's annual budget for Congressional action was $10. Within eight years, the dark-haired, blue-eyed woman had raised $750,000 and enrolled 50,000 members in the National Woman's Party. More than that, national attention had been attracted to the woman's suffrage amendment, which had been languishing in Congress since 1878. Alice Paul helped convert a President, a Congress and a nation into supporting that amendment.

She started by organizing a parade: floats and 5,000 marching women—the touch of pageantry that was to characterize events that Alice Paul put together. Leading the parade astride a white horse was beautiful Inez Milholland in white cossack suit, white kid boots and pale blue cloak. General Rosalie Jones marched with her band of women who had walked to Washington, D.C., from New York. The parade was on March 3, 1913, the day before Wilson's inauguration. This probably explains the crowd of half a million—and their rowdiness. One drunk came close to being run over when he almost fell under a float. Others tried to climb aboard. Crowds surged into the streets, breaking the restraining ropes. The police, claimed the marchers, were of little help. A Congressman's wife reported that a policeman had shouted at her, "If my wife were where you are I'd break her head."

No woman was seriously hurt, but they had an issue nonetheless. A Senate investigation followed, keeping the affair—and the suffrage amendment—alive in the public mind for weeks.

For the next few years, Alice Paul led her forces in quieter warfare. Lobbyists sought to get the suffrage amendment out of committees and onto the floor. On one Valentine's Day, members of the House Rules Committee were favored with suffrage valentines (see page 98).

In 1914, after breaking with the National American Woman Suffrage Association, Miss Paul's group organized a campaign against Democrats in the nine states where women had gained the vote through state action. Alice Paul theorized that the party in power should be held responsible for the lack of a federal suffrage amendment, and their control of the Presidency and Congress made the Democrats the party in power. Two years later, Alice Paul directed the party's campaign against Woodrow Wilson.

On January 9, 1917, he received 300 women who brought him resolutions commemorating Inez Milholland Boissevain, the young herald of the 1913 parade who had recently died. He seemed distinctly cold to the deputation. Perhaps he had not expected it to turn into an-

Clad in brown and carrying pilgrim staffs, suffragists march from New York to Washington in 1913.

other lobbying session, or he may have been piqued that the spokeswoman for the group should quote Charles Evans Hughes, the candidate he had defeated in 1916. At any rate, Alice Paul was left with the impression that the President would not be receiving any more Woman's Party deputations for suffrage. "So," she says today, "we decided to send him a perpetual deputation." The next day, January 10, 1917, she led a group of 12 women to the White House with banners demanding that Wilson back suffrage.

Like the March 1913 parade, the picketing had an air of pageantry about it. Day after day, the women made their ceremonial march to the White House gates, carrying the Woman's Party's purple, white and gold colors as well as the lettered banners demanding suffrage. "We always tried to make our lines as beautiful as we could and our banners were really beautiful," Alice recalled.

Standing outside the White House gates in winter twilight, the women were aware of the picture they made—tricolor banners contrasting with the black grillwork of the fence and the bare branches of the trees. And then on spring mornings hyacinths, azaleas and forsythia on the White House lawns repeated the purple, white and gold of the banners.

But the entry of the United States into World War I broke up these patterns and inspired the Woman's Party to militancy. Picketers' slogans became increasingly pointed, increasingly unpatriotic to some eyes. When a Russian delegation visited the White House on June 20, 1917, the pickets carried a banner declaring in

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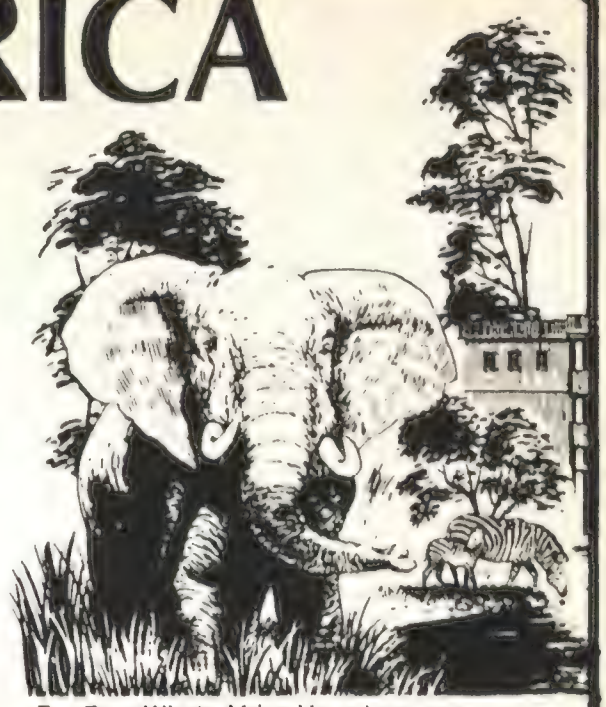

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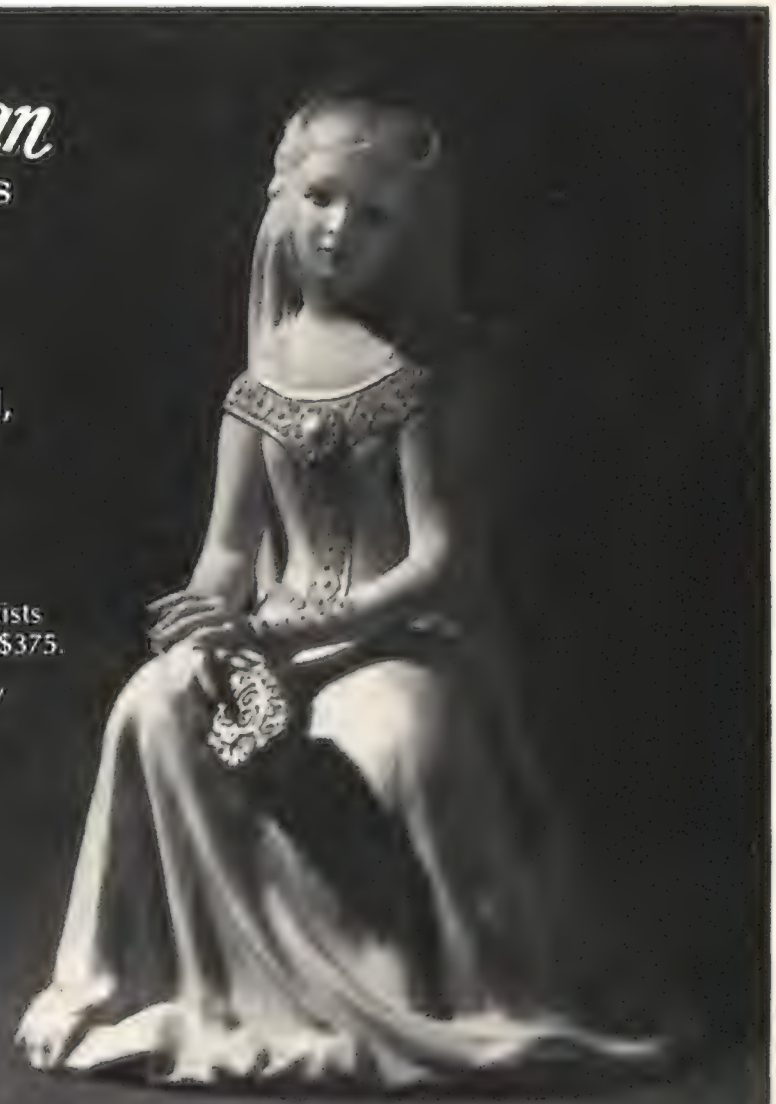

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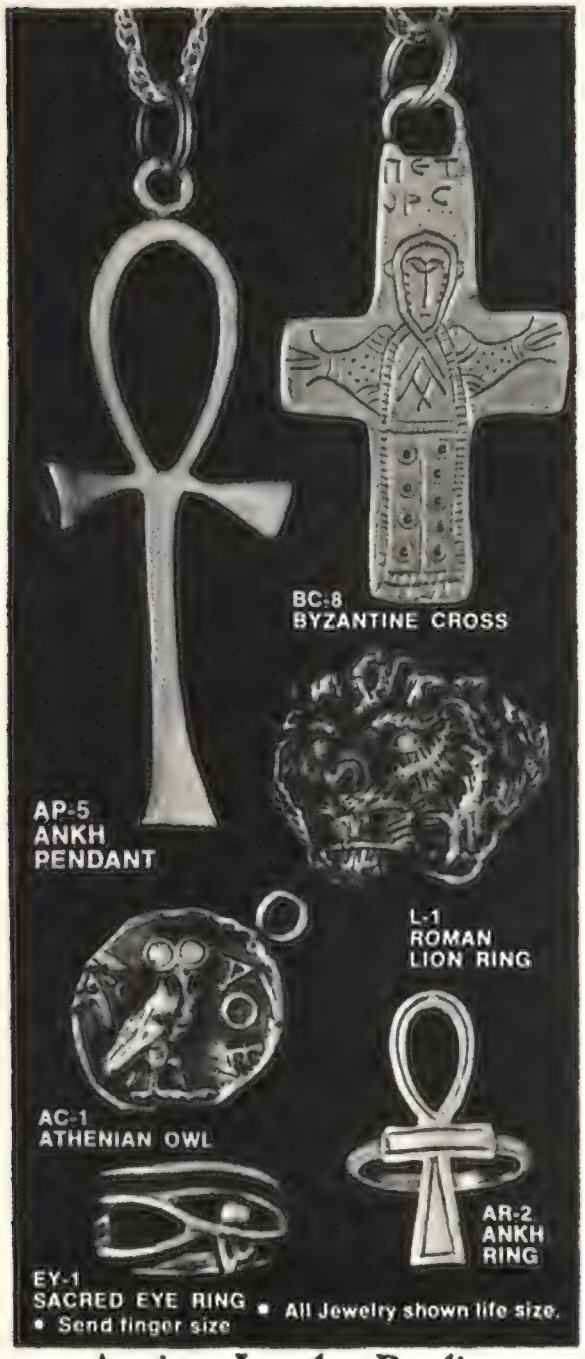

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part: "WE THE WOMEN OF AMERICA TELL YOU THAT AMERICA IS NOT A DEMOCRACY. TWENTY MILLION WOMEN ARE DENIED THE RIGHT TO VOTE." That was too much for one man in the gathering crowd; he tore the banner down. Next day an irate woman ripped a banner that read, "DEMOCRACY SHOULD BEGIN AT HOME."

The following day, police began arresting pickets, but that, of course, did not dissuade Alice Paul and the Woman's Party. Before the suffrage amendment passed, there were some 500 arrests and 168 women served prison sentences, mostly for "obstructing traffic."

From the District Jail and the Occoquan Workhouse, the women reported food full of weevils and worms, cells full of rats and roaches. They were put to work painting latrines and sewing with the other prisoners. At one point, a group in Occoquan testified that prison authorities physically assaulted them, twisted their arms, dragged and threw them around. Prison authorities in the District of Columbia workhouse, on the other hand, claimed that suffragists attacked *them,* falling upon the acting superintendent, matron and three male guards.

Imprisoned pickets demanded to be treated as political prisoners. When ignored, they went on hunger strikes. It was a trick Alice Paul had learned in England—along with one of the consequences of hunger striking: force-feeding (SMITHSONIAN, July 1970). "They ran a tube through the nose into the stomach," Hazel Hunkins Hallinan explains. "And you mustn't think of the nice soft rubber tubing they have today." Rose Winslow, in jail with Alice Paul, smuggled notes to friends: "The same doctor feeds us both. . . . Don't let them tell you we take this well. Miss Paul vomits much. I do, too . . . ." When the women still refused to eat, prison authorities moved Alice Paul to a psychopathic ward.

Alice in her youth: tiny, fragile, pretty—and tough as nails.

Late in November 1917, however, she and the other pickets were released. Someone had apparently realized that making martyrs out of them was no way to quell the movement. The Woman's Party was already sending speakers, especially recently jailed women, throughout the country. Early in December 1917, at a mass meeting held to honor released pickets, more than $86,000 was raised.

On January 9, 1918, Woodrow Wilson declared himself in favor of a federal suffrage amendment. The fact that his declaration came exactly one year after the Inez Milholland deputation had visited him suggested that militant tactics had worked. So the party turned to them again to prod Wilson toward doing more for the suffrage amendment. In September, they ceremoniously burned the President's words in Lafayette Park. Many suffragists, most notably Carrie Chapman Catt and her National American Woman Suffrage Association, believed that suffrage was finally achieved in 1920 in spite of, rather than because of, Alice Paul's militant strategy.

Embarrassed by pickets and hunger

In a peaceful mood, militants sent valentines to key government leaders.

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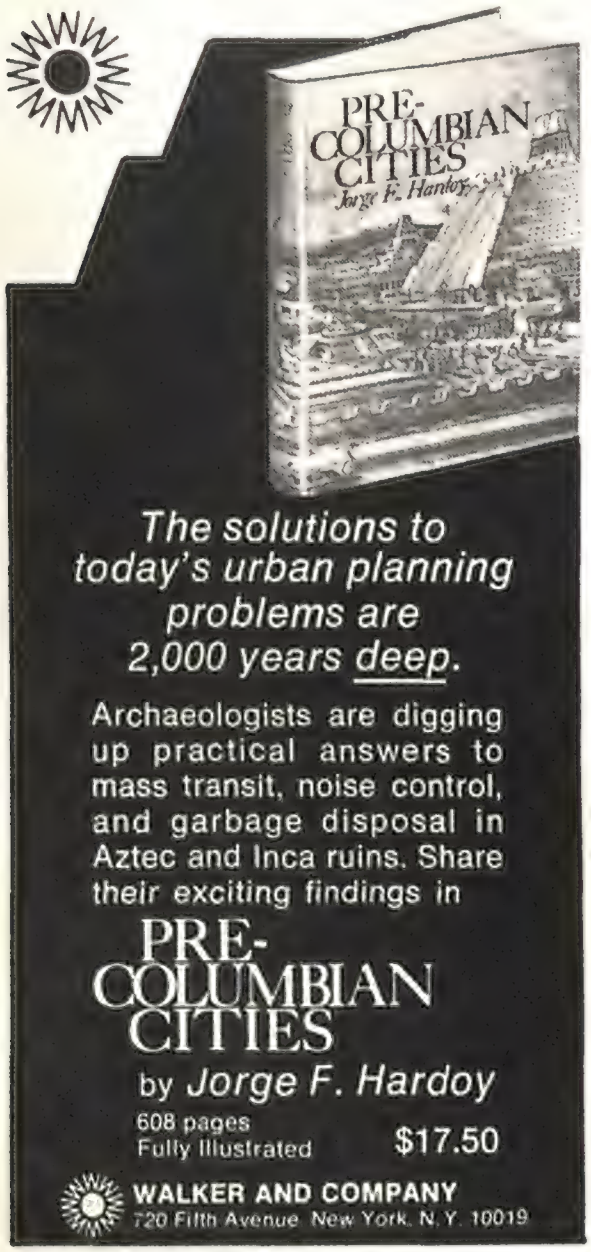

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strikes, especially with the country at war, Carrie Catt's group disavowed militancy and erected a two-block-long billboard on New York City's upper Fifth Avenue dissociating themselves from it. While the Woman's Party was harassing Wilson, Mrs. Catt's organization—with quite different tactics—was gently persuading him to see the light. Perhaps the two groups, without consciously cooperating, served to convince the President. Even Mrs. Catt couldn't deny that Alice Paul's early tactics brought needed attention to the federal amendment. It had not even been debated in Congress for 26 years.

In Alice Paul's eyes, suffrage was not the whole war. There were other battles to be fought. "It is incredible to me that any woman should consider the fight for full equality won," she said in 1920. She and her party began in 1923 to work for the passage of an equal rights amendment. It would be 49 years before this would get by both houses of Congress, and during that time Alice Paul earned three law degrees besides lobbying to have the equal rights principle recognized by the League of Nations and included in the United Nations preamble.

"Equal rights has been a harder fight than suffrage," she now admits. "The difference is that the equal rights amendment would take something away from the groups that opposed us." From the time it was first proposed, the equal rights amendment's most bitter opponents have been groups such as the National Consumers League and the YWCA that have worked to achieve legislation protecting women from "hard" labor and long hours.

"One by one the organizations have come over," Miss Paul notes. Last May the League of Women Voters—the group founded by the National American Woman Suffrage Association even before suffrage was won—authorized local leagues to work for equal rights ratification.

But it has been a long struggle, one in which the old dramatic tactics seem to have had little effect. In 1939, flares were lighted in front of the Alva Belmont House to burn until the amendment passed Congress. But the flames died out long before approval.

A new movement, women's liberation, seems to have done for equal rights what Miss Paul's group did for suffrage. "Well, I don't care what people think," Alice Paul said when I pointed this out. "They do stand for many things we don't stand for," she added, mentioning abortion and the desegregation of men's clubs. "They aren't concentrated on a single measure like we are."

The Alva Belmont House, where Miss Paul spends much of her time, seems to have had its character molded by her single-minded intensity, perhaps fittingly, since she has saved the house from government plans to raze it for a parking lot. Although the years have taken their toll on the house (one of the oldest on Capitol Hill), there is a grandeur about it and its handsome antiques, many of which are directly related to the women's movement. Here stands Susan B. Anthony's desk, Elizabeth Cady Stanton's chair. Paintings and busts of suffragists line a front hall lit by a red-and-gold Victorian fanlight. At the far end, a purple-and-gold banner demands suffrage for the women of the United States.

Off to the fray, a grim Alice leads suffragists from headquarters.

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Book reviews

The Clocks of Columbus
Charles S. Holmes
(Atheneum, $10)

E. B. White once wrote: "It is always apparent to James Thurber that at the very moment one's heart is caught in an embrace, one's foot may be caught in a piano stool." Yet, like the moon, Thurber had a dark side.

He died 11 years ago this month, fearing for the future of mankind. If he harbored any concerns as to the mortality of his works, he never expressed them, and the past decade has demonstrated—in various media—that there always will be an audience for his brand of caustic, irreverent humor and the sober subtleties we often forget.

There are few hints in this enterprising biography of the Columbus, Ohio, native as to what events, if any, caused his outlook to turn 150—if not 180—degrees. It wasn't a sudden change, Professor Holmes notes, but rather the kind of reflection on our times at which any introspective man might arrive. Perhaps, too, it was the fact that in earlier days "he searched out and celebrated disorder, illogic and confusion, feeling that these qualities were desirable counterbalances in a society overcommitted to logic and organization. Later, as history changed the world he knew, and as illogic and disorders on an international scale threatened to engulf mankind, he began to champion those things which hold a society together, and his fantasies and his brilliant images of chaos became warnings and distress-signals rather than signs of revelry."

Thurber would have enjoyed reading and perhaps parodying *The Clocks of*

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Columbus, for here a professor has written a scholarly yet somewhat pedantic and cumbersome treatise on a man who overflowed with pungency and wit. If it were a work on Henry James or on Alfred North Whitehead, it would be impossible reading. Yet the joy of Thurber saves the day.

Holmes takes Thurber from the bosom of his life-of-the-party matriarchal influence to the campus of Ohio State, thence to the American Embassy in Paris, back to Columbus and her newspapers, again to Paris and the Riviera and finally to New York. Each immortal Thurber exercise in nostalgia and parody is given free rein, set against the events of his life that inspired the given pieces. And all our favorite characters—human and otherwise—roam the pages in verbal descriptions and, occasionally, in illustrations. The author has reconstructed a man who spent most of his life marching off to battle against the inanities of human failings, only to find that people failed to recognize the touch of savagery in his work. "How many years will it take to convince people that I'm not a clown?" he protested shortly before his death.

An interviewer once observed that Thurber had "a warm heart and an angry mind." Dorothy Parker wrote that he dealt "solely in culminations. . . . It is yours to ponder how penguins get into drawing rooms and seals into bedchambers, for Mr. Thurber will only show them to you some little time after they have arrived there. . . . He gives you a glimpse of the startling present and lets you go construct the astounding past."
—*Michael J. Bandler*
Free-lance literary commentator

Mary Wollstonecraft
by Eleanor Flexner
(Coward, McCann & Geoghegon, $8.95)

"Who are your heroes?" the author of the best seller, *Sexual Politics,* was asked.

"Mary Wollstonecraft," was Kate Millett's answer.

To anyone interested in the historical development of women's rights, Eleanor Flexner's *Mary Wollstonecraft* reads like an interesting, engrossing visit with an old friend. Quite old in fact, since Mary Wollstonecraft published *A Vindication of the Rights of Woman* in London in 1792. This angry classic is the movement's original spark, and will continue to be

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Foreword by GREGORY PECK

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the cornerstone to any scholarly study of the women's rights movement as long as the English language exists. The seeds of its influence reached into the 19th century to Margaret Fuller, Lucretia Mott, Elizabeth Cady Stanton, and even to some of the present women liberationists.

Eleanor Flexner has chosen a psychoanalytical approach to her subject. "Without the circumstances of her own life," she says, "Mary Wollstonecraft could not have written the book she did."

The life of feminism's British mother, it seems, could have filled the pages of a cheap, romantic novel. As a child, she slept on her ever-battling parents' doorstep to prevent further violence. Forced to earn a living, she considered the (respectable) women's professions: Teacher —"only a kind of upper servant"; governess—like "going to the Bastille"; lady's companion—"shut out from equality and confidence."

Later, in Revolutionary France, she found True Love, only to be left high and dry as an unwed mother. She attempted suicide by jumping into the Thames. Her next love married her when she again became pregnant. She was a firm believer in natural childbirth. Only things were *too* natural in those days, and in 1797 she died a few weeks after childbirth. Her daughter married Percy Bysshe Shelley, and, in 1818, published *Frankenstein.*

Before she died, Mary Wollstonecraft lambasted the existing coquettish status of women. "Let them be taught how to think" was—believe it or not—a revolutionary idea. "Let them have a chance to become intelligent," she urged. She went on to argue that women, "as rational creatures, ought to [be educated] by the same means as men, instead of being educated like a fanciful kind of half-being."

With new insights provided by previously unpublished letters, parish registers, Admiralty records, wills, visits to her subject's old haunts, Eleanor Flexner has put together the most complete biography on this remarkable woman to date —and one that makes lively reading. Eleanor Flexner's last impressive tome was *Century of Struggle: The Woman's Rights Movement in the United States,* and she was presumably nurtured in feminism from the cradle. Her mother was a suffragette.

—Marie-Claude Wrenn
Former *Life* reporter, writer on women's liberation

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Vicuna–Peru: 7-28 April, 1973–ecology–Dr. William L. Franklin, Utah State University.

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Gythion–Greece: 8-29 August, 1973–marine archaeology–Dr. Niki Scoufopoulos, Yale University, Aegean Institute.

Under the Guns
Bruce Bliven jr.
(Harper & Row, $10)

History looked at from an angle slightly askew can be fascinating. Bruce Bliven jr. has written a brief account of the city of New York in the year between the battles of Lexington and Concord and the Declaration of Independence. Written with quiet wit and thorough scholarship, Mr. Bliven gives the reader a good insight of what was actually going on in that year now often wrapped in legends.

Not all of our forebears were sturdy minutemen taking the family musket off the wall to march with General Washington. It is apparent that given their druthers, most people would just as soon have skipped the whole thing. The mood of the colonies was nervousness and apathy, punctuated by panic, because the Revolution was a reluctant rebellion of one establishment against another.

Mr. Bliven's account of how New York groped its way toward the final break with Great Britain contains amusing ironies. Thanks to the rather disdainful courtesy of the Royal Governor, William Tryon, a curious modus vivendi between the Crown Government and the rebellious authorities was achieved. It happened that on June 25, 1775, both Governor Tryon (returning from a yearlong stay in England) and General Washington (on his way to assume command of the Continental Army at Boston) were due to arrive in New York. To accommodate citizens who wanted to pay respects to both, the Governor tactfully delayed debarkation until after the General's welcome.

The motive for New York's apparent timidity was the presence in its harbor of British warships perfectly capable of destroying the city by cannon fire. But this cockeyed political double life could not continue forever. Relations deteriorated.

By the late spring of 1776 it was apparent that the final break with Great Britain was inevitable. But even while the Declaration of Independence was being drafted, the New York delegation to the Continental Congress was under instructions to abstain from voting on it. This situation prevailed despite the arrival of a fleet from Boston bringing General William Howe and his army, riding at anchor and poised to strike at the city.

When the Declaration was voted on July 4, New York abstained. This em-

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barrassment was corrected only on July 9, when the Provincial Congress voted its support for separation and independence. When the formal parchment copy of the Declaration was ready in August, the New York delegation was allowed to make a post-factum correction of history, and their signatures appear on the document under dateline of July 4, 1776.

Bliven's book describes events as they happened, and if it is not with all the glory and romance which we have so often given them, it is an inspiring tale nonetheless. It is also a healthy antidote to the high-minded blather about the Revolution with which we are likely to be inflicted in Bicentennial writings.
—*Woodruff Murray Price*
Descendant of the Mrs. Murray who "entertained" Howe in New York and enabled the patriot Israel Putnam to escape

Sketches of a Tour to the Lakes, of the character and customs of the Chippeway Indians, and of incidents connected with the Treaty of Fond du Lac
by Thomas L. McKenney
(Imprint Society, $40)

In 1862 Thomas L. McKenney, superintendent of Indian affairs, managed to wangle an assignment as one of two commissioners to negotiate an important treaty with the Ojibwas. His purpose was to escape the War Department for reasons of health, money and politics, as well as to learn something about the Indians by visiting them on their home grounds.

The journey lasted four months and covered some 4,000 miles. Much of the way was by steamboat and birchbark, from Washington to Baltimore to New York, up the Hudson and via the Erie Canal to Utica and Buffalo, then up Lake Erie to Detroit, across Lake Huron to Sault Ste. Marie, and finally all across Lake Superior to Fond du Lac at its far western tip. Here some 700 Ojibwas (formerly Chippeways) were gathered.

After about ten days of negotiating and visiting with the Indians, McKenney returned to Washington. Only six months later his book about the "tour" was published. It contains sections of a journal, but most of it is in the form of letters addressed to an unnamed friend. Herman J. Viola, in his Introduction, says that he thinks this was McKenney's boss, Secretary of War James Barbour; but the re-

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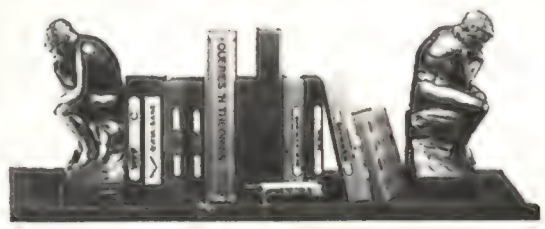

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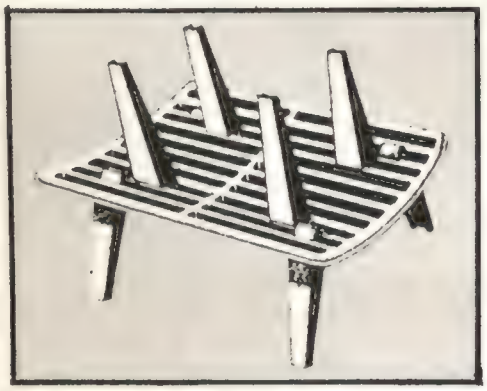

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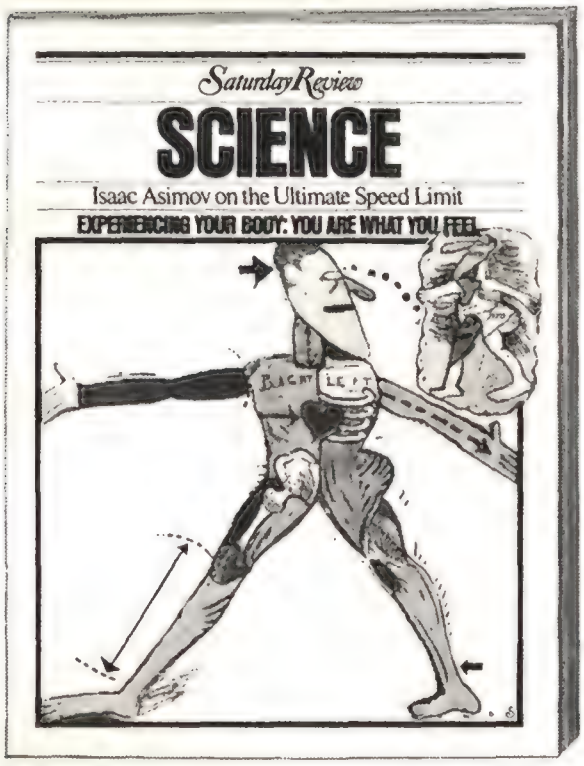

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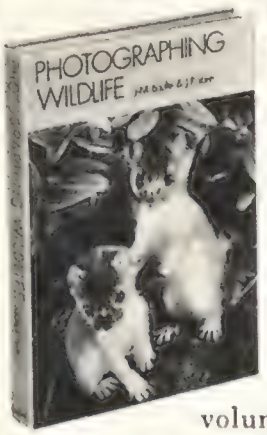

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cipient seems more likely to have been a young female relative of the author.

This new edition is accompanied by fine reproductions (six of them in color) of 29 watercolor sketches of Indians and scenery prepared for the original publication in 1827 by Fielding Lewis from James Otto Lewis' original drawings. Just as McKenney's text has been reset with misprints corrected, so the illustrations are reproduced directly from Lucas' watercolors, which had been used as models for the poorly reproduced lithographs in the original edition.

The short Introduction by Herman J. Viola, author of a forthcoming major biography of Thomas L. McKenney, skillfully outlines the historical and biographical context of the original book. But unfortunately that is the extent of the critical apparatus; there are no notes to the text, no map of the journey, nor even an index to the contents.

McKenney gives us vignettes of the urbanizing East, of the new frontier villages in New York, and of the French Canadian voyageurs on the lakes. He had only superficial opportunities to learn about the "character and customs of the Chippeway Indians."

The modern reader will be reminded of how long ago all this was. Our country's landscape was then pristine. McKenney's simple patriotism and his optimistic admiration for the progress of Euramerican settlement are of the period.

Like many of his countrymen, he expressed melancholy pessimism over the imagined fate of the Indians. He was perhaps less typical in his sincere concern for Indian welfare.

—*William C. Sturtevant*
Curator, department of North American Anthropology, Smithsonian Institution

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Domestic Tours for Associates

Study tours are designed as educational travel for members of the Smithsonian Associates. Smithsonian staff or other experts accompany all tours. For information: Mrs. Patricia Kilkenny, Room 106 SI, Smithsonian Institution, Washington, D.C. 20560. (For foreign study tour information, see page 102.)

Everglades, Past and Present: An introduction to the bird, plant and animal life of Florida's West Coast from Sanibel Island to Everglades National Park—November 12-19.

Apollo 17 Space Launch: Witness the last scheduled launching of an Apollo moon mission. Tour includes briefing and guided tour of NASA facilities (preference will be given to Associates who have not been on previous Apollo trips)—December 3-8.

Christmas at the Smithsonian: Second in a series of weekends for the National Associates, featuring a Bach concert, private showing at museum shops, museum tours, a tree-decorating party and an orientation reception and dinner—December 15-17.

California Mission Trail: Follow the chain of missions along "El Camino Real" from San Diego to San Francisco—January 13-20, 1973.

Baja California Whale Migration: mid-February 1973.

Birds of North Carolina: Observation of waterfowl at Mattamuskeet Wildlife Refuge—February 23-27, 1973.

Big Bend National Park: Exploration of Big Bend and surrounding areas of southwest Texas—March 11-17, 1973.

Musical Instrument Makers: Meet the makers of dulcimers, fiddles and zithers in Virginia and the Carolinas and study their skills—April 1973.

Vanishing Indian Crafts: Southwestern tribes demonstrate their ancestral crafts and how they are keeping them alive—May 1973.

Smithsonian highlights

National Collection of Fine Arts
"Recent Accessions" includes prints, drawings and watercolors by such artists as George Bellows, Edward Hopper and Charles Sheeler. Opens November 17.

"Wonder Production—Volume I" traces the evolution of an idea and the development of a book of lithographs by artist Ellen Lanyon. Opens November 19.

Division of Performing Arts
Jessye Norman, the internationally known soprano, will be presented by the Friday Morning Music Club on November 8 at 8:30 P.M., Baird Auditorium, Natural History Museum. Call (202) 966-3851.

Ornette Coleman and Quartet represent the avant-garde in the series of Jazz Heritage Concerts. The performance will be at 8 P.M. on November 12, Baird Auditorium, Natural History Museum. Call (202) 381-5395.

"The Chinese Skin Shadow Plays," a special lecture-demonstration presentation of Chinese shadow puppets, will be given on November 16 at 1:30 and 8:30 P.M., Baird Auditorium, Natural History Museum. Call (202) 381-5395.

Greg Smith Singers offer 17th- and 20th-century music in the Grand Salon of the Renwick Gallery on November 16 at 8:30 P.M. Call (202) 381-5395.

Ernesto Bidetti, classical guitarist, will be presented by the Washington Performing Arts Society at 7:30 P.M. on November 19, Baird Auditorium, Natural History Museum. Call (202) 393-4433.

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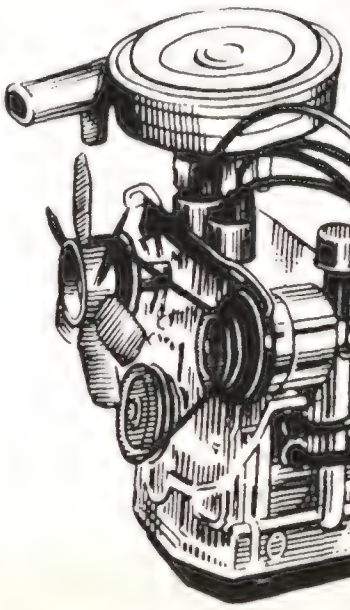

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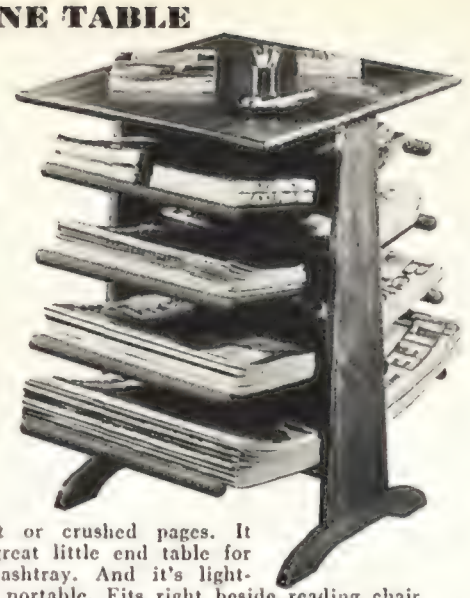

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Museum of History and Technology

"Stamps and the Mails," depicting the history of the U.S. postal system, opens November 17.

Smithsonian Associates

"Smithsonian Year, 1971," the annual report of the Smithsonian Institution, and "On Museum Objects, Truth, and Education—Reflections of the Secretary of the Smithsonian Institution upon the 125th Anniversary of its Founding," by S. Dillon Ripley, are available free of charge to Smithsonian Associates. Write: Smithsonian Associates Reception Center, Great Hall, Smithsonian Institution, Washington, D.C. 20560.

The Speakers Bureau provides an opportunity for organizations within the United States to request curators and other Smithsonian staff members to lecture on a wide spectrum of disciplines. Travel and other expenses are paid by participating organization. Write: The Speakers Bureau, Smithsonian Associates, Smithsonian Institution, SI 118, Washington, D.C. 20560.

Allen Ginsberg, one of the best known of contemporary American poets, reads from his works on November 17 at 8:30 P.M., Baird Auditorium, Natural History Museum. Call (202) 381-5157.

The Smithsonian Associates have inaugurated a new service known as the Smithsonian Associates' Museum Reference Service. Members traveling within the United States may write for a folder comprised of lists by states of many of our country's outstanding museums, galleries and historical sites. Brochures are included when available. Specify the states in which you will be traveling and subjects of interest. Allow three weeks for mailing. Write: Smithsonian Associates' Museum Reference Service, Associates' Reception Center, Smithsonian Institution Building, Washington, D.C. 20560.

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15 Examples of Psychology Today

SPARE THE ROD USE BEHAVIOR MOD

Instead of spending years searching for the cause of troublesome behavior in a child, argue the behavior modification therapists, why not just change the behavior? There are startling examples of the effectiveness of this approach.

CLAPTRAP ABOUT AGING

Contrary to popular belief, old persons are not necessarily lonely or desolate. Few ever show overt signs of senility. For those who do; psychological and psychiatric treatment is by no means futile.

HOW GROUPTHINK LED TO VIETNAM

In terms of group dynamics, the presidential advisors on Vietnam and other foreign policy disasters were victims of what the author calls "groupthink"—and he describes eight symptoms to watch out for in decision-making.

UNDERSTANDING CHILDREN'S ART

An educator who has collected and studied more than a million pieces of children's art over the past 20 years has made some startling discoveries. Children's scribblings and drawings, she says, contain a voluminous written message which has not yet been completely deciphered.

WHY MANY BRIGHT WOMEN FEAR SUCCESS

Controlled experiments showed that women are about seven times as likely as men to have anxieties about the possibility of successful achievement. "Consciously or unconsciously, the girl equates intellectual achievement with loss of femininity."

THE WIZARD OF OZ AS THERAPIST

The amazing parallels between the story of Oz and the experience of individual therapy. Dorothy is the patient. The Wizard is the therapist who appears first as a monster, then as a fraud, then simply as a good and helpful person.

LEARNING THE VIOLIN AT AGE 4

Psychological secrets of teaching thousands of small Japanese children to play the violin—so beautifully that it moved Pablo Casals to tears.

SUPPOSE YOU WERE HITLER'S ANALYST?

He comes to you because he is troubled by guilt feelings over his ruthless, grandiose plans and asks you to help him get rid of these disturbing feelings. What should you do?

GUILT-EDGED GIVING

Tests in behavioral labs support recent theories that charitable behavior is motivated by guilt and shame. Empathy plays an important part too.

HOW TO QUIT SMOKING

A report on the varying effectiveness of different techniques, including having smoke blown back into your face, doubling your smoking and then stopping, electric shock, and role playing.

WE'RE ALL NON-CONSCIOUS SEXISTS

Proof that nonconscious assumptions about a woman's "natural" talents (or lack of them) are as widespread among women as among men. Identical writings received significantly lower ratings when attributed to female authors.

THE MOBICENTRIC EXECUTIVE

Today's job-hopping executive values motion not because it leads to change but because it IS change. More and more, however, he is the one who reaches the top rather than the plodding insider.

IS THE CROWD REALLY MADDING?

To find out, a researcher studied volunteers in crowded living conditions. The results were not what you might expect.

GEORGE WALLACE'S SUPPORTERS

Months before the political analysts started explaining the "message" being sent by Wallace voters, an analysis in Psychology Today made it clear that racism was not the main key to the Wallace support.

THE IMPORTANCE OF SAVING FACE

When, why, and how do we need to engage in face-saving? Lessons learned in behavioral lab studies can help mediators settle conflicts in negotiations.

You don't have to be a professional psychologist, counselor, or social worker (although many of our readers are) to enjoy Psychology Today. If the examples above turn you on, you are invited to tune in.

Psychological discoveries have progressed as far from Freud's id and Pavlov's salivating dogs as rockets have from kites and balloons. But until now it has been difficult for the well-read layman to keep up.

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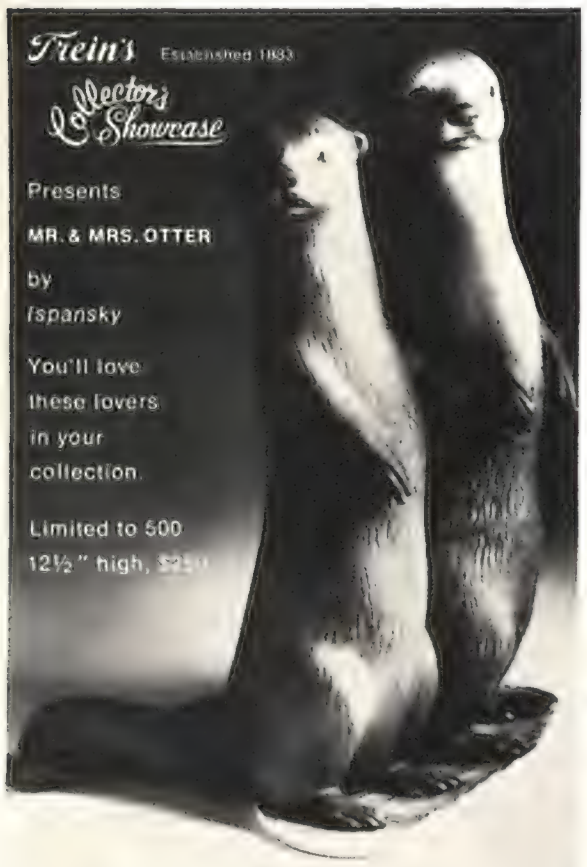

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Museum of Natural History
"The Splendor of British and European Butterflies" is demonstrated in original watercolor paintings by London artist Brian Hargreaves. Opens November 15.

Freer Gallery of Art
"Visionaries and Eccentrics in Japanese Woodblock Illustrations," an illustrated lecture by Dr. Donald Jenkins of the Art Institute of Chicago, will be presented on November 14 at 8:30 P.M.

Renwick Gallery
"American Pieced Quilts" illustrates the artistry and beauty of this folk craft. The exhibit will be circulated nationally by the Traveling Exhibition Service. For information on quilting demonstrations, call (202) 737-8811.

Traveling Exhibition Service
There are up to 70 different Smithsonian-sponsored exhibitions on display each month throughout the United States and Canada. For a complete listing and information on how to bring an exhibit to your area, write: Traveling Exhibition Service, Smithsonian Institution, Washington, D.C. 20560.

- Fairhope, Ala.—"Contemporary Art from Lebanon" (Percy H. Whiting Art Center, Nov. 4-Dec. 3).
- Sault Ste. Marie, Mich.—"Portrait of Vietnam" (Lake Superior State College, Nov. 11-Dec. 10).
- Midland, Tex.—"Paintings by Edwin Scott" (Museum of the Southwest, Nov. 11-Dec. 10).
- Kentfield, Calif.—"The Avant-Garde in Theatre and Art" (College of Marin, Nov. 11-Dec. 10).
- Elmira, N.Y.—"Dante, the Divine Comedy" (Arnot Art Gallery, Nov. 11-Dec. 10).
- Orlando, Fla.—"A Children's World" (Loch Haven Art Center, Nov. 11-Dec. 31).
- Chicago, Ill.—"Greenland: Arctic Denmark" (Field Museum of Natural History, Nov. 11-Dec. 30).

Smithsonian Commons
Luncheon facilities for members of the Smithsonian Associates are in the original Smithsonian Building. Open weekdays from 11:30 A.M. to 2 P.M., the Commons offers a buffet luncheon from $1.40 to $1.85 upon presentation of an Associate membership card.

Paramahansa Yogananda

What you should know about Yoga

Calmness and happiness are related. A person with a calm mind is a happy person. Instead of becoming uptight, one should be able to swing into intense activity and, like a pendulum, return to a center of calmness within himself. Yoga produces that calmness. It produces happiness — a "bliss" consciousness. Yoga gives meaning to life.

Yoga signifies "union" or mergence. It is the practice of scientific techniques that leads man to become conscious of, and to merge with, his True Nature. A yogi is one who practices Yoga, or attains realization (of the soul or Self) through Yoga.

There are several kinds of Yoga: ▪ **Hatha Yoga**—Postures for physical health. ▪ **Karma Yoga**—The path of action. ▪ **Bhakti Yoga**—The path of love. ▪ **Jnana Yoga**—The path of knowledge. ▪ **Raja Yoga**—Supreme Yoga. Includes the main features of the above and all other Yogas.

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Announcing The Collectors' Collection.

A collection of eight highly unusual reference works. Each hand-picked by the Smithsonian staff. Each an extraordinary value at its low Associate's price.

1. AMERICAN PAINTED FURNITURE 1660-1880
by Dean A. Fales, Jr. and Robert Bishop

Some of America's most beautiful and fascinating antique furniture is enriched with painted decoration, an art that began with our earliest settlers in the 17th century and flourished until the last quarter of the 19th. This magnificent, lavishly-illustrated reference work is the first ever to be published on the subject. Drawing on both public and private collections, it surveys the three basic types of American painting and decoration: plain painting, painting used to imitate a finer wood or marble, and imaginative painting intended to improve on nature itself. 577 illustrations (including 148 color plates) of painted chairs, chests, tables, settees, beds, clocks, looking glasses, desks, secretaries and boxes.

$33.50 Associate's price **$29.50**

2. THE DOLL
by Carl Fox and H. Landshoff

This is a book to delight child and adult, collector and historian. Text and pictures capture the enchantment of dolls as miniature "people," providing a wealth of historical and technical information and illustrating the variety and meaning of dolls around the world. Almost 200 full-page plates show dolls from many cultures and eras. Fashion models made for queens. Fancifully dressed Victorian damsels. Sophisticated French ladies by Jumeau, Bru, Steiner, Huret, Rohmer. Kewpies. Brownies. Fetish figures. Many, many more. Carl Fox, a long-time collector, is a former director of Museum Shops for the Smithsonian.

Published at $35.00 Pre-pub. price $30.00
Associate's price **$26.50** until Dec. 31

3. THE SPINNING WHEEL'S COMPLETE BOOK OF ANTIQUES

If your eyes light up at the sight of an 18th century music box, grandfather clock, or luminous Tiffany window, this authoritative one-volume treasure trove is for you. It covers every period and style throughout the centuries, and is fully illustrated with gloriously detailed photographs. It includes choice examples of favorite "collectibles," oddities and curiosities, along with *all* their approximate values. 608 pages.

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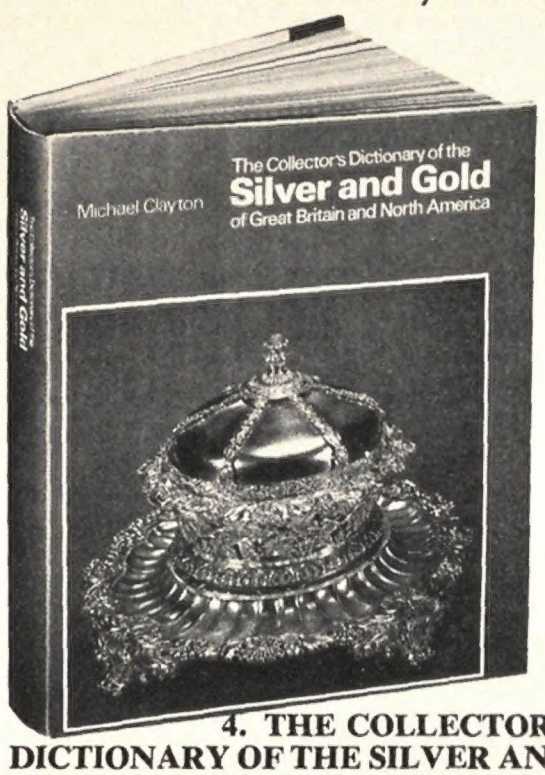

4. THE COLLECTOR'S DICTIONARY OF THE SILVER AND GOLD OF GREAT BRITAIN AND NORTH AMERICA
by Michael Clayton

The craftsmen who fashioned the precious treasures of Church and State in Great Britain and North America responded to the demands of private patrons with equal inventiveness, making exquisite objects for every occasion, from reliquaries and goblets to porringers and thimbles. This dictionary provides a comprehensive survey of their work, from the Middle Ages to the late 19th century. The art of outstanding goldsmiths and silversmiths is described in detail, and can be evaluated in relation to the work of less celebrated craftsmen. Over 700 photographs, 100 line drawings and 48 color plates.

$19.95 Associate's price **$17.75**

5. THE AMERICAN SHAKERS AND THEIR FURNITURE
by John G. Shea

This is not a how-to-do-it book, although it can be used as one. It is a how-they-did-it book, and it is sorely needed. It approaches Shaker craftsmanship from the designer's point of view, filling the need for a careful analysis of Shaker design—not just for furniture but for smallcraft and utility designs as well. The author has included many photographs of classic pieces, along with accurately measured drawings and illustrations of original joinery methods.

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6. THE ART OF JEWELRY
by Graham Hughes

The complete story of jewelry—its history, its changing styles, its craftsmen and designers and their techniques, its great collectors and patrons, its discoverers, its value and allure. The author traces the evolution of jewelry from prehistory through the great civilizations of Egypt, Greece, Byzantium, Rome, and pre-Columbian South America, then down through the Dark Ages, Medieval times, the Renaissance, the 18th and 19th centuries and the modern period.

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7. AMERICAN SILVER IN THE YALE UNIVERSITY ART GALLERY
by Kathryn C. Buhler and Graham Hood

The Yale silver is the finest collection of its kind in existence. Spanning almost two centuries of American art and history, it traces the silversmith's craft in America from its earliest beginnings to the period following the war of 1812. This highly-detailed, profusely illustrated reference work includes it all. From the sturdy and serviceable Hull and Sanderson pieces to the baroque William & Mary style, the sinuous and graceful Queen Anne designs, the rococo silver of the late 18th century, the coolly aloof work that followed the American Revolution, and the heavier style of the early 19th century. Plus European silver used in America, reproductions of Marks, and an index. $35.00 Associate's price **$31.50**

8. THREE CENTURIES OF FURNITURE IN COLOR
by H. D. Molesworth

This is perhaps the most ambitious book ever created on the art of furniture and design. In more than 700 magnificent full-color illustrations, it presents a superb cross-section of the finest examples of furniture design in Europe and America—from the 17th, 18th and 19th centuries to the era of Art Nouveau. Many pieces are shown in classic room settings that illustrate the authentic background of the period. Will delight antique-lovers, collectors, professional and lay decorators.

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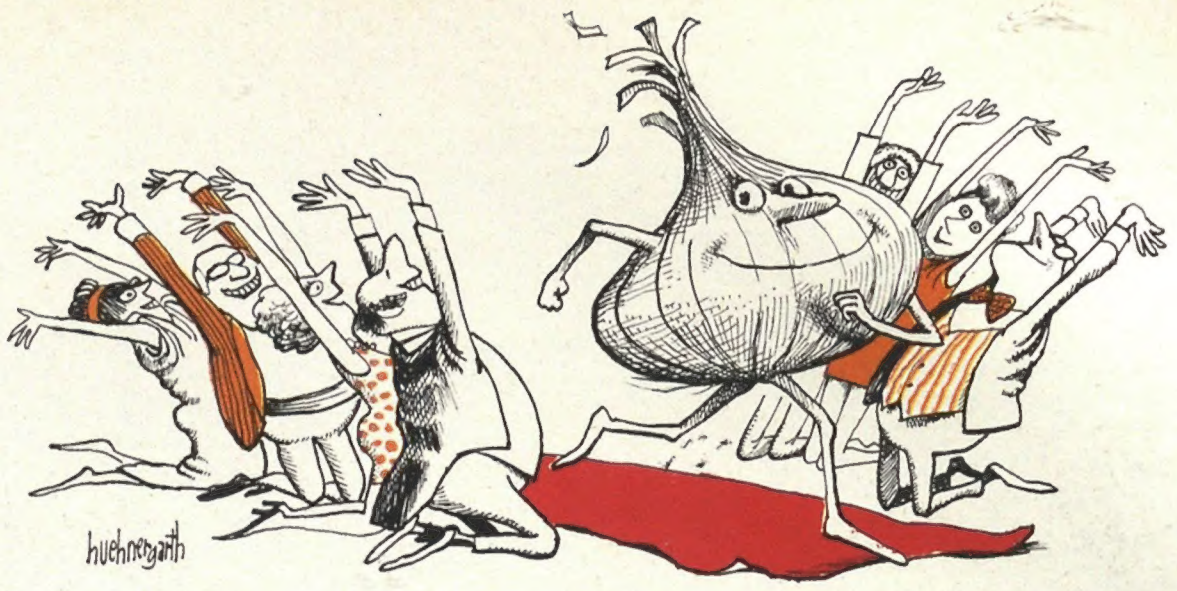
By Axel Hornos

What's so lowly about the onion?



Would you liken the onion, that unpretentious, plebeian vegetable, to a pearl? Don't laugh—"onion" derives from the Latin *unio,* a large pearl. And, indeed, when one thinks of the bulb's milky opalescence the flattering comparison begins to make sense.

In some parts of the ancient world, where the most ordinary objects were often vested with recondite meanings, the onion's circularity made it a symbol of moral perfection. The Egyptians, for example, seem to have incorporated the onion into their elaborate metaphysics—but they also ate it. Laborers are depicted devouring onions in tombs that go back at least to 3000 B.C. And Herodotus, who was in Egypt some 2,500 years later, reports being shown an inscription that—according to his interpreter—totted up the cost of all the onions, garlic and radishes eaten by the builders of the pyramids at Giza. (It has been suggested by scholars, however, that the interpreter was inventing a translation for hieroglyphics that he couldn't read.)

In any case, the Israelites—during the Exodus—looked back with regret on the succulent vegetables of Egypt: "We remember . . . the cucumbers, and the melons, and the leeks, and the onions, and the garlick" (Numbers 11:5). Egyptian mummies have been found with onions stuffed in the gutted abdominal cavity, or placed against the eyes, ears and soles of the feet.

The onion's talismanic powers have lasted to our day, with some new twists befitting an increasingly sophisticated world.

It helps girls torn by doubt to decide which of their beaux will end up as their husbands. The steps couldn't be simpler: Write the names of four suitors on four onions, then put the onions in a dark place; the first to sprout will bear the name of the man you'll marry. Maidens with a more romantic turn of mind who slide an onion under their pillow on St. Thomas' Eve are guaranteed to dream about their future mate—what kind of dreams and with what effects is not made clear.

When the wedding finally takes place, throwing an onion after the bride will insure her many happy, tearless years. And if a joyous event is in the offing, the mother-to-be can make it less painful by taking the precaution of sitting on a pail full of boiled onions. It can delicately be added here that, should the husband falter in his duties, a diet generously sprinkled with raw onions will restore his vigor without undue delay. (But he should be careful not to eat the bulbs at night, an action which, inevitably, would be followed by a funeral within a week.)

Whatever one's needs or wishes, often one can depend on the onion's puissance to make those needs and wishes come true under the best possible circumstances and at the cost of only a few pennies, if any.

Take health. With onions within easy reach, there is no call for costly medical or hospital care. Half an onion on a shelf will soak up all germs of diseases, leaving the home as aseptic as an operating room. Hang another half on a string, and the most obdurate cold will be snuffed out by the onion's energetic effluvia. Onion juice rubbed on the baldest pate will cause hair to grow as thick as thistles.

A Sicilian doctor who reached a ripe old age without spending a single day in bed used to travel with one onion. "Do you see this?" he would ask, brandishing it like a weapon. "With it nobody needs to go to the next world."

No wonder that since antiquity the onion has been associated with robustness and persistence. It is prized by many as a muscle builder and its telltale flavor appeals to those stout souls who delight in offending polite society's noses. This is a vegetable which combines pungency, tristesse and romance, as in a song of the 1920s: *When it's sweet onion time in Bermuda/ I'll breathe my love to you.*

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